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Board of Governors to Discuss Revised Code

Second Revision of Proposed Revised Code for the Paper and Pulp Industry to be Considered Today, Thursday, at Meeting in New York — General Revision Undertaken Believed More Acceptable Than Independent Action—Revision of Labor Provisions May Assist Materially in Obtaining Satisfactory Trade Customs

The Board of Governors of the American Paper and Pulp Association are to consider the Second Revision of the Proposed Revised Code of Fair Competition for the Paper and Pulp Industry today, Thursday, in New York.

Charles W. Boyce, secretary of the Paper Industry Authority, has notified all the paper and pulp manufacturers, as follows:

"Discussion by the Board of Governors of the proposed revised code for the paper and pulp industry was postponed at the April 26 meeting in order that each Governor could consider the revision with the members of his Division before taking action. Upon motion, duly passed, it was voted that a second meeting of the Board be called for May 10 in New York and that each member in the meantime should obtain instructions from his Division as to the stand he should take.

"In considering the revised code it is important to keep in mind that hearings have already been held on wage rates, Trade Customs and machine shifting and installation. If a general revision is undertaken, new hearings would be necessary on the general administration, hours of work and accounting and selling articles.

"The general revision was undertaken because it appeared as more acceptable than independent action upon the proposals which had been heard, for revision of wage rates in conformity with the wage rate hearing might assist materially in obtaining Trade Customs in such form as the industry desired. It was with this thought in mind that the Paper Industry Authority, with Mr. Pickard's assistance, undertook to redraft the code.

"It is important that the industry realize fully its position in so far as wage rates are concerned. Although no definite recommendation has been made by the NRA on the February 13 hearing, it is more likely than not that increased rates would be recommended. If such increases could be incorporated in a general revision that would include Trade Customs and other provisions that the industry needs, the general revision would seem to be good policy. Moreover, important changes were needed in the hour provisions, and these have been included in the new draft."

Hours of Labor

The Second Revision of Article IV of the Proposed Revised Code for the Paper and Pulp Industry regarding Hours of Labor, reads as follows:

1. Except as provided in Sections 2 and 3 hereof, no employee in the Industry shall be required or permitted to work hours in excess of the following prescribed limits:

a. Watchmen: 112 hours in any period of 14 consecutive days, but not more than 12 days in any such period.

b. Chauffeurs, truckmen, switching crews, boiler house and power plant engineers, firemen, electric and hydro-electric operators, and filterplant employees: A basic work week of 42 hours with a tolerance of 10% during each calendar year provided, however, that time worked in excess of 10 hours in any one day or 42 hours in any one week shall be paid for as not less than time and one-third.

c. All other laborers, mechanical workers or artisans, employed in any plant, mill or factory, or on work connected with the operation, protection or maintenance of any such plant, mill or factory: A basic work week of 40 hours with a tolerance of 10% during each calendar year provided, however, that all time worked in excess of 8 hours in any one day or 40 hours in any one week shall be paid for as not less than time and one-third.

d. Executives and their personal secretaries and other employees engaged in a supervisory capacity, and chemists, research employees, engineers, draftsmen, and employees in the accounting, treasury, statistical, order and shipping departments, receiving $35.00 or more per week, and outside salesmen: No limitation.

e. All persons employed in clerical or office work or in any other capacity not included under any other subdivision hereof: 40 hours in any one week and 8 hours in any one day, provided, however, that additional hours may be worked to meet peak demands, but all additional hours so worked in any calendar quarter shall be balanced within a period of six months before the beginning or after the end of such quarter by vacation period or periods of shorter hours without reduction in the weekly wage.

2. Hours in addition to those prescribed in subsections b and c of Section 1 may be worked:

a. When, because of the temporary absence of a relief worker, such work is necessary to avoid a shutdown or danger of loss or damage of property.

b. By workers called in from an off-duty shift to assist in changing wires or machine clothing when a paper machine is shut down for such purpose.

(Continued on page 47)

Demand for Kraft Paper Better in Chicago

Encouraging Developments Aid in Strengthening Already Firm Market—Demand for Various Grades of Fine Paper Rather Listless—Cover Papers Continue in Satisfactory Request—Ground Wood Papers Comparatively Slow

[FROM OUR REGULAR CORRESPONDENT]

CHICAGO, Ill., May 7, 1934—Reports from Chicago paper representatives and jobbing firms indicate a continuation of the mild recession which has characterized the local market recently. Several encouraging developments in relation to specific markets occurred during the week and aided in strengthening already firm markets. Such a development, for example, is said to have materially aided the kraft outlook for the future.

While there is some hesitancy as the industry awaits reports on the revised code there is an evident feeling that whatever revisions are made the position of various markets is likely to be strengthened. Actions of code authorities on a number of matters are also proving of assistance in building for the future.

Specifically, the kraft market was especially firm during the week. Demand in fine papers was not quite so satisfactory and reports of improvement a bit harder to locate. Book papers developed no particular weaknesses, while covers retained a fair measure of demand. Specialties were practically unchanged. The ground wood market was comparatively slow though there seems to be a firm belief that the news print situation may soon right itself as an aid to this market. Paperboard was in only fair demand. Waste papers reflected the general slight recession in the local market.

Midwest Safety Conference

A gratifying interest in the forthcoming annual Midwest Safety Conference, to be held at the Hotel Sherman, Chicago, May 9 and 10, is being evidenced by the paper industry, particularly on the part of mill representatives realizing the importance of safety work. While the appearance on the program of W. J. Peacock, of the Northern Paper Mills, is partially responsible for this interest, the offices of the Conference report interest in all sessions evidenced by the paper industry. Sessions will be held covering fire prevention, handling materials, public safety, safety equipment, training and educational methods, maintaining interest in safety and dust in industry. It is at the "Maintaining Interest in Safety" session that Mr. Peacock will speak.

Paper mill representatives will closely follow the training and education methods sessions and also the discussions on safety equipment, speakers on the latter program discussing foot and leg protection, head and eye protection and the value of safety equipment from an accident prevention viewpoint. Included in those present at the Chicago program which is, incidentally, the twelfth annual congress, will be many representatives from paper mills who made splendid records in previous safety contests sponsored by the National Safety Congress. The conference will close the evening of May 10 with an address by Samuel H. Cady, vice president and general counsel of the Chicago and Northwestern Railroad. A number of excellent exhibits will feature the congress.

Handbill Measure Defeated

The gratifying efforts of the local paper industry to interest itself in state and national legislative affairs—considered of prime importance by some associations because of the need for business interest in legislation—continued during the week. Pressure brought on by paper and allied interests helped immeasurably in the defeat of S.B. 74, known as the "handbill" measure, which, if passed, would have materially checked the free distribution of advertising literature of all kinds. The bill was killed in committee. The industry is also active in opposition to the State Industrial Recovery Act, according to reports. This bill, known as H.B. 162, is having a terrific tussle in the fourth special session of the Illinois legislature. Party lines have been sharply drawn while business, in general, has protested against a measure which, it is felt, would have very detrimental effects on business recovery in the State.

Paper Salesmen's Activities

While awaiting further action from code authorities on the revised paper code, the Middle West Division of the Salesmen's Association of the Paper Industry and its important code cooperative committee finds time to point out that four of the six golf courses which will be graced by paper salesmen and guests during the summer program are rated as "AA" courses in the Chicago district. The other two are class "A" layouts, thus assuring Dick Cook and his associates of at least some classy places to play—even if the shots don't match up with the layouts. The first event on May 25 is to be played at Exmoor, a class A club. The only other A course is to be Skokie. The other four, Chicago Golf, Knollwood, Bob O'-Link and number four course at Olympia Fields, where the final outing will probably be held, are AA courses, highest ranking in these parts.

News of the Trade

A seemingly unimportant detail in relation to display of advertising literature which turned out to be a really fine idea is featured over at the Chicago offices of the Eastern Manufacturing Company in the Conway Building. A rack for the display of Eastern literature has, for some time, been a feature of the office. Now the advertising department has suggested that each of the pieces of literature be taken from the cover and displayed in all its glory as the mail recipient views it. This has been done and a most colorful bit of display is the result. While the envelopes may have been good looking they didn't compare with the cover of the advertising piece itself. Incidentally, the latest Eastern mailing headed "Let Me Show You How You Can Save With Atlantic Bond," with the clever little stuffer on the folder, gets a main spot on the Eastern rack.

The Heco Envelope Company, prominent Chicago envelope manufacturer, is introducing a new envelope paper, Heco Vellum, of a clear, blue-white color to perfectly match rag bond letterheads. It has an unusual antique finish and, according to the description, has remarkable strength surpassed by bleached kraft which does not possess the clear blue-white color.

Volume eight, number two, of "The Friendly Adventurer," published regularly by Bermingham & Prosser, Chicago paper concern, makes its appearance in Chicago paper circles this week. As usual, it contains a wealth of interesting philosophy and practical business comment, featuring in an unobtrusive way a map of the central states

showing Bermingham & Prosser offices, conveniently located at Kansas City, Chicago, Kalamazoo, Cleveland and New York. Some excellent copy about the importance of going after spring business is also included.

Max J. Rosenberg, of Montrose Paper Mills, 714 South Dearborn street, was forced to undergo an emergency operation Monday, April 30. He is reported to be out of danger, but will be a convalescent for the next two or three weeks. Mr. Rosenberg is well known in the paper trade in Chicago, having established himself in 1918 as a general paper distributor.

A. E. McMaster Made Vice President

VANCOUVER, B. C., May 5, 1934—A. E. McMaster, general manager of the Powell River Company, was elected vice-president at the recent annual meeting of the company, and will now occupy the joint position of vice-president and general manager of the large organization, which operates the largest individual newsprint plant on the Pacific coast. He will continue to have his offices at the headquarters of the company at Vancouver, B. C. The plant is located about 100 miles up the B. C. coast at Powell River.

S. D. Brooks, president of the company, presided at the annual meeting held in Vancouver, and paid a warm tribute to Mr. McMaster's services as general manager, commenting on the efficient way in which he had handled the company's affairs during the past years of adverse business conditions.

"We now feel," he said "that improvement in business has been so well maintained in the last half of last year and the months of the current year, that we are warranted in assuming that the corner has been turned for good, and the election of Mr. McMaster to the position of vice-president is our tribute of appreciation for the services he has rendered to the company in the past three or four years."

Those attending the annual meeting included Edward and Paul Brooks from Minneapolis, and Mr. and Mrs. J. G. Sample from Chicago. The veteran president of the Board, Anson S. Brooks, Minneapolis, did not come out to the meeting this year.

New York Mills Report Improvement

[FROM OUR REGULAR CORRESPONDENT]

ALBANY, N. Y., May 7, 1934—An improvement in paper mill conditions during the past several weeks is reported from some concerns in this section and indications for a busy summer season are good. The code adopted under the federal government program has proven beneficial and mills are co-operating in every respect. In many instances firms have reported the taking on of additional workers despite the decrease in working schedules. The majority of mills are operating a certain number of hours weekly under the code and some of the mills are running with night shifts. Several thousand paper mill workers in this section have been affected. Among the busiest plants just now are the Manning-Behr Company, Watervliet, West Virginia Pulp and Paper Company, Albia Paper Box Company, Mohawk Paper Mills, Albany Felt Company, Union Bag and Paper Corporation, Hudson Falls, Finch Pruyn & Co., and the International Paper Company, Corinth. Some of these plants are running 5 and 6 days weekly while others are running under shorter schedules. Prospects that business for the remainder of the year will be good are bright and manufacturers predict a better report at the end of the year.

Higher News Print Prices Predicted

[FROM OUR REGULAR CORRESPONDENT]

BOSTON, Mass., May 7, 1934—A forecast of higher prices for news print by the first of next year and maybe earlier, news that the company's bank debt has been reduced by $2,000,000 since the first of the year and uncertainty regarding the resumption of dividend payments featured the report of A. R. Graustein, president, at the annual meeting of the International Paper Company here on April 25.

"Both the power and paper ends of our operations are suffering from increased costs," Mr. Graustein said. "We cannot tell how long costs will continue to increase, nor how greatly. We do know, though, that in a time like this, when costs are increasing, it will be necessary for us to get higher prices for our products.

"The greater volume we are getting is a help, but depression conditions drove us to so low a point that help alone is not sufficient. Prices have increased on most grades we deal in, except news print, but the price of news print remains at the lowest point reached in the depression. We are hopeful that that condition will be remedied, but we cannot predict the time.

"I do feel that we can count on a higher price for news print at the beginning of next year, and I hope that it will come earlier than that, but cannot make any prediction that it will."

Mr. Graustein said that since the first of the year the company had reduced its bank debt by $2,000,000, the second $1,000,000 having been paid last week, although not due until May 15. The bank debt now is $12,500,000, maturing on August 1, owed to three banks, with which negotiations are on for an extension of the loans to May 1, 1935. It is hoped before the year's end to reduce the debt by $1,000,000 more, Mr. Graustein said.

Resumption of dividends, the president continued, will depend largely upon costs, selling prices and volume. He added, in reply to a stockholder, that it would not be wise to consider dividends with a $12,500,000 bank debt even if earnings were sufficient.

The system includes extensive unencumbered property that might be mortgaged to raise money to pay the bank loans, Mr. Graustein said, if there was a real market for the sale of industrial bonds.

"The difficulties created by the Securities Act in its present form," Mr. Graustein continued, "are such as to make it almost impossible to sell bonds. I think it entirely safe to say that we can expect no dividends this year, and I do not mean by that to indicate dividends next year."

High Temperature Insulation

"High Temperature Insulation" is the title of a lecture prepared by the Johns-Manville Engineering Department, and used each year by schools of mechanical, chemical, metallurgical and ceramic engineering throughout the country.

This lecture comprises a short review of the principles of heat transfer; a discussion of the theory and practice of conductivity values of insulation and refractories; insulation in boilers, kilns, oil stills, furnaces, regenerators and other typical industrial equipment operated at high temperatures. A standard formula for heat transfer by conduction and description of a method of determining heat flow through furnace walls are also included.

Reprints in the form of 32-page 6 inch x 9 inch pamphlets are available for those interested in the subject.

Consolidated Pulpwood Imports Doubled

Shipping Operations to be Continued Until November 1, for Purpose of Delivering Wood to Mills at Wisconsin Rapids, Stevens Point, Biron and Appleton—Neenah Paper Co. Starts Construction of New $250,000 Addition for Rag Storage

[FROM OUR REGULAR CORRESPONDENT]

APPLETON, Wis., May 7, 1934.—Pulpwood imports for the mills of the Consolidated Water Power and Paper Company, Wisconsin Rapids, Wis., will be doubled this year over the cordage received last year. The company's shipping subsidiary, the Newaygo Tug Line, is making preparations to raft approximately 50,000 cords across Lake Superior from the Thunder Bay region of Canada to the loading hoist at Ashland, Wis., according to John Lindbloom, manager of the tug line.

Six rafts will be towed across this summer, bringing wood largely from Pigeon River, Pigeon Bay, Magnet Point and Port Arthur, Canada. Seventeen men will be employed on the tug, and fifty will work in two shifts at the Ashland hoist, where the wood is transferred to freight cars. The hoist is being repaired, and the tug is being overhauled preparatory to its first voyage.

Last year the company brought over three rafts. The first trip will be made about May 25, and the shipping operations probably will be continued until November 1 in order to handle all the wood and deliver it to the mills at Wisconsin Rapids, Stevens Point, Biron and Appleton, Wis.

Perforated Wrapping Paper

Another large market has been developed for paper through a patent granted six employees of the Marathon Battery Company, Wausau, Wis. They have perfected a perforated paper used for wrapping the core of a dry cell, inside the metal cup container. Cheese cloth formerly was used for this purpose, but the expense involved led to the development of the paper wrapper instead. Since the paper was first used in 1931, the company has saved a large amount of money in the cost of wrapping material and in labor.

E. J. McEarchron, vice-president of the company and one of the inventors, said the patent was applied for in November, 1931. Since first introduced, the paper has been used to wrap 16,000,000 dry cells annually. The cost of the paper is about one-twentieth that of cheese cloth.

The other inventors are Reginald S. Johnson, Harold G. Jensen, Otto E. Ruhoff, George H. Schroeder and Otto J. Krueger. Commercial assignment of their patent rights has been made to the battery company.

Alexander Company Wins Decision

The Walter Alexander Company, Wausau, Wis., which has extensive paper mill interests, won an important decision in the Wisconsin supreme court in a decision handed down last week. The company does not have to pay state income tax on a profit of $475,084 realized in 1927 from the sale of stock of the Wisconsin Valley Electric Company, which serves many of the mills along the Wisconsin river.

The Alexander company, organized in 1920 by Walter Alexander and four children to deal in securities, claimed the profit was distributed as a liquidating dividend which was not taxable. The high court upheld this contention.

In June, 1927, the company voted to dispose of its Wisconsin Valley holdings and distribute the profit as a liquidating dividend. An option to purchase the Wisconsin securties was exercised later by the H. M. Byllesby Corporation. The 959 shares of the Alexander company brought $594,580 as compared with the original cost of $119,465 when purchased in 1920.

Paper Workers Vocational Program

A three-year program of instruction for workers in the pulp and paper trades has been prepared by the Wisconsin vocational schools, and will be carried on through classes beginning in the fall months. Most of the paper mill cities will be included, since the schedule includes Appleton, Neenah, Menasha, Kimberly, Kaukauna, Green Bay, Marinette, Stevens Point, Wisconsin Rapids, Wausau and Rhinelander.

L. J. McNamara has again been engaged as itinerant instructor and will cover these cities to conduct the classes. He is now determining the needs of each particular city and will prepare the program accordingly.

News of the Industry

Construction of an addition has been started by the Neenah Paper Company, Neenah, Wis. The building will cost about $25,000 and will be used for rag storage.

Labor policies, wages, codes and other subjects were discussed last week at meetings of the general mill council of the Kimberly-Clark Corporation. The sessions were held at the main offices at Neenah, Wis.

Representatives of all of the mills at Neenah, Appleton, Kimberly and Niagara, Wis., and Niagara Falls, N. Y., were present. The council is made up of representatives chosen by the employees and the management to deal with problems affecting the workers, and has been operating successfully for many years.

Because of its reorganization plans, the permit of the Tomahawk Kraft Paper Company, Tomahawk, Wis., to sell securities has been suspended by the securities division of the Wisconsin Public Service Commission. A bondholders committee is now conducting a refinancing plan.

Thirty stockholders of the Pacific Coast Paper Mills who reside at Appleton, Wis., held a meeting last week at which a report was given by John D. Watson. Mr. Watson is on the board of directors and he reviewed the proceedings of the company's annual meeting, March 15, at Bellingham, Wash.

Mead Corp. Elects Officers

[FROM OUR REGULAR CORRESPONDENT]

DAYTON, Ohio, May 7, 1934.—George H. Mead was re-elected president of the Mead Corporation at a meeting of stockholders held in Chillicothe recently. One important change in the official family was made when Clarence Francis, executive vice-president of the General Foods Corporation, was chosen to be a member of the board of directors, having succeeded Ralph Coburn, also of the General Foods Corporation.

The latter is understood to have located on the Pacific Coast.

The other directors and officers were retained, including Speed Warren, treasurer, and Alan Goldsmith, secretary.

The corporation controls a number of large paper mill enterprises in Canada and the United States.

News Print Industry Fears Pulpwood Shortage

Sharp Expansion in Production and Consumption of Paper Principal Factor in Situation—Few Observers Express View That Conditions Will Become Acute in Immediate Future, at Least—Past Winter Difficult for Wood Cutting

[FROM OUR REGULAR CORRESPONDENT]

TORONTO, Ont., May 7, 1934—A situation in the news print industry which is attracting considerable attention at the present time is the possibility of a shortage of pulpwood, engendered by a variety of factors. A chief reason has been the sharp expansion in the consumption and in turn production of news print. To this can be added the fact that most mills in the past years have concentrated on reducing their wood piles, a development dictated by the low level of consumption and price for news print, while a third factor has been the difficult winter for wood cutting which has just been concluded. Varying views are taken in the industry and in other interested sources as to the imminence of such a shortage but for the most part there appears agreement that there has been a distinct tendency in that direction, even while few believe that the condition will assume anything of an acute character, at least in the immediate future.

While some mills have undoubtedly been able to maintain a better position than others, so far as pulpwood supplies are concerned, it can broadly be assumed that the industry as a whole has been engaged in converting assets into cash working capital. The increase in consumption and production of news print paper in the past few months has been little short of spectacular and well in excess of general expectation. During the first quarter of this year, production by Canadian mills reached 93 per cent. of the output for the same period in the peak year, 1929. In the same period, however, revenue amounted to only 53 per cent. of that achieved in the 1929 period. This is explained by reduction in prices and disappearance of premium on United States funds.

Wage Pact at Abitibi Plants

A temporary arrangement has been reached between Abitibi Power and Paper Company workers in the Northern Ontario mills and receivers of the firm, Fred Wyatt, union delegate to the wage conference in Toronto, announced on his return to Sault Ste. Marie. "We will carry on under it for a time," he stated, "and will meet the company again to discuss wages and partly to discuss working conditions. I do not wish to say what the temporary arrangement is until I report to the unions." The company offered to restore the 1932 wage scale of 7½ per cent. over the present wage scale with a 40-cent-an-hour minimum. The present minimum is 36 cents an hour. The Paper Makers' Union asked for a minimum of 19 per cent. increase, while the Pulp and Sulphite Union asked a minimum of 51 cents an hour at present and eight hours' pay for a six-hour day for all getting more than 45 cents. A despatch from Iroquois Falls states that employees of the Abitibi Power and Paper Company voted to accept the new company wage rate which came into effect May 1. The new scale is similar to that of 1932, with a minimum rate of 40 cents an hour, retroactive to April 1. The increase is around 7½ per cent. and it is understood should the NRA in the United States complete the news print supplementary code the workers here will get an additional increase in proportion to comparable mills. An attempt will be made to have a standard six-hour day.

Firstbrook Boxes Had Deficit

Firstbrook Boxes Ltd., Toronto, had a deficit of $63,863 in the year ended December 31, 1933, the first year of operation since reorganization of the company on December 3, 1932. Now controlled by Robert Gair Company, Inc., the original bondholders are represented on the board of directors, but received no interest on their investment during 1933. The last financial statement to be published was that for the year ended January 3, 1931, when the company had net earnings of $52,404 after depreciation, but before bond interest. Engaged in the manufacture of corrugated boxes and cartons and, to a lesser degree, in wooden boxes, the company defaulted on bond interest due June 15, 1932, and was reorganized later in the year. Present capital structure consists of $513,940 of 6 per cent first mortgage bonds, on which arrears of interest total $32,121, 1,039 shares of $100 par value preferred stock and 100,000 shares of no par value common stock. Recent acquisition of the plants of Canadian Paperboard Company by Robert Gair Company, Inc., is particularly interesting in view of the Gair control of Firstbrook Boxes, Ltd., which is a purchaser of paperboard. The Canadian Paperboard plants have a combined capacity of 200 tons of paperboard daily. The Robert Gair Company is one of the largest manufacturers of containers in the United States and owns valuable patents. Controls of two Canadian companies by Gair is believed to indicate that the latter company plans to export its products throughout the British Empire.

Notes and Jottings of the Trade

C. V. Hodder and Ivan Moffit, who have been serving as secretaries to certain groups connected with the paper industry for a number of years, in order to render a fuller service to the organizations they now serve, will operate a joint office from May 1 in the Commerce and Transportation Building, 159 Bay street, Toronto.

Card and Paper Workers, Ltd., Peterborough, Ont., have completed repairs made necessary by a recent fire, which caused damage of about $46,000, and have resumed full production. Some new machinery has been installed, the principal item being a new drying machine of an entirely different type from the vertical drier in which the fire originated.

The Dennison Manufacturing Company of Canada, Ltd., manufacturers of paper specialties, at Drummondville, Que., have completed plans for extending their factory. The expansion will increase the size of their plant by 40 per cent. and will be started as soon as the frost will permit. The building is scheduled for completion by June 1. L. C. Leach, plant manager, said: "The new plant is made possible by the reception of our Canadian-made goods in the Canadian market and also has been brought about by export business which we do from this factory."

Valleyfield Coated Paper Mills, Ltd., of which R. A. Rawsthorn is the Toronto manager, state that demand for regular coated book and litho has increased since the beginning of the year, but is not yet considered up to normal volume. The company is meeting with success with its new Val-Met-Al gold, platinum and tin coated paper for the paper box and label trades.

Boston Paper Market Only Moderately Active

Warmer Weather, However, Accelerates Demand for Summer Specialties—Fine Paper Division Displays Slight Improvement—Demand for Kraft Wrapping Papers Somewhat Limited—Box Board Quotations Holding to Schedule

[FROM OUR REGULAR CORRESPONDENT]

BOSTON, Mass., May 7, 1934—For a considerable period the wholesale paper market in and around Boston has been fair. The last week was no exception. In some cases, the call for fine paper during the week under review was better than it had been, although it had not been any too good. In a few instances the fine paper market was reported as "a little soft." The demand for wrapping paper was somewhat limited, in general, although in a few cases very fair. The warmer weather accelerated the movement of drinking cups and other specialties, with the needs of such articles for use at shore resorts and parks developing. Box coverings moved well, at least in some cases. The same was true of greeting card stocks. Box board dealers report rather favorably, saying that prices are holding stiff on boards. Paper stock was very quiet, in a featureless market, with prices unchanged.

Paper Merchants to Discuss Code

An important meeting of the New England Paper Merchants Association is to be held Thursday at the Warwick Country Club, Warwick, R. I., where Code Discussion and a Field Day will be held. All paper merchants in Rhode Island are expected. From 11 a. m. to 1 p. m., addresses will be given by C. A. Esty, Code Authority for Region No. 1, and some other prominent speaker. Luncheon will be served from 1 to 2 p. m. If the weather is pleasant, golf, tennis, baseball, swimming, barnyard golf and other sports will be in order from 2 to 5 p. m. In case of rain, there will be indoor sports, such as "rolling the bones" and cards. After the dinner, which will be served at 5:30, there will be an entertainment by the entire show of the Club Bagdad, with full orchestra and chorus.

Committees are as follows: Reception—Jack Halkyard, Jim Campbell, George Kerr, Lindsey Cummings and Alden Arnold. Sports—Golf, Harold Simmons, Len Dix and Lindsey Cummings; tennis, Knowlton Shaw and Al Logan; baseball, etc., Jim Campbell and Reg Taylor. Leonard Dix of Whitney-Anderson Company says they will have a foursome which will get into the highest score of any four from any other company.

News of the Trade

Clifton H. Wheeler, salesman for the D. F. Munroe Company, although suffering from laryngitis, with a consequent loss of his voice, is probably selling more goods for this reason. He gets a hearing and says that he secures the closer attention of the buyer. Mr. Wheeler, who has been with the D. F. Munroe Company two years, covers hotels, hospitals and other high grade consumers.

The advertising campaign of the American Writing Paper Company on Trojan Bond, which is being successfully carried on, has been supported by attractive mailing pieces produced by Carter, Rice & Co. Corp.; Knight, Allen & Clark, Inc.; and John Carter & Co., Inc.

Eugene O. Hanson, New England sales manager for the Brown Company, is to speak Tuesday on Solka products at a business men's club at Attleboro, Mass.

Henry L. Goodman has engaged a new salesman, who will devote his attention to the various lines carried by Mr. Goodman's concern, including box coverings and greeting card stocks.

Returns from the Price Reporting Plan are being received at the office of the Code Authority for the Paper Distributing Trade for Region No. 1.

A meeting of the Regional Committee, with a full attendance, was held Friday at the office, 49 Federal street.

The Minerallac Statiscope

This convenient, pocket-type instrument, enclosed in a hard rubber case, is about the size of an ordinary fountain pen. It contains a neon tube which lights up when held in

POCKET-TYPE MINERALLAC STATISCOPE

the static field which surrounds all high-voltage cables, auto ignition, belting, etc.

Originally designed for detecting high voltage currents on electric cables, it has been extensively used for locating static charges prevalent in paper, grain, textile mills, etc., around belting, conveyors and other equipment.

It is manufactured and sold by the Minerallac Electric Company, 25 North Peoria street, Chicago.

St. Regis Shows Loss

[FROM OUR REGULAR CORRESPONDENT]

WATERTOWN, N. Y., May 7, 1934—The annual report of the St. Regis Paper Company for the year ending last December shows a net loss of $1,480,326 after interest, depreciation, federal taxes, inventory adjustments, subsidiary preferred dividends but exclusive of $953,395 loss on sale of investments which was charged to surplus account. The loss in 1932 was $1,443,697 exclusive of $368,273 loss on sale of investments which was charged to surplus account. The consolidated balance sheet for 1933 shows total assets of $77,942,665 compared with $83,092,393 at the end of the preceding year and a total surplus of $19,645,934 against $22,550,165. The current assets for the past year amounted to $6,241,157 including $1,229,996 cash and current liabilities were $2,440,889 (exclusive of $4,000,000 secured bank loan and $825,000 funded debt of subsidiaries due in 1934.) This compares with cash of $1,612,316, current assets of $6,443,639 and current liabilities of $3,033,222 at the end of the preceding year. Inventories amounted to $2,783,313 against $3,158,239. The capital stock outstanding at the close of last year consisted of $44,283 shares of seven per cent accumulated preferred and $4,122,464 shares of common stock.

Now E. M. Sergeant Pulp & Chemical Co.

The name of E. M. Sergeant Company was changed, effective May 5, 1934, to E. M. Sergeant Pulp and Chemical Company, Inc. In every other respect the company's situation remains unchanged. The change of name was decided upon because it was felt that the old name did not adequately cover the present scope of service.

DOWNINGTOWN

In Our New Catalog « « «

WE WOULD, of course, like every prospective suction roll buyer to visit our shops, to watch a Downingtown Suction Roll being assembled. Since this is impossible, we have incorporated what you would see in our new 20 page catalog. It is profusely illustrated with pictures and sectional drawings, which will give you a complete picture of how the Downingtown Suction Roll is made.. After reading this catalog, you will know why many large companies (Names on Request) have recently purchased Downingtown Suction Rolls. Write for this catalog today. The Downingtown Mfg. Co., Downingtown, Pa.

You can see for yourself why this SUCTION ROLL performs so well « « «

WE CAN RUBBER COVER YOUR OLD DOWNINGTOWN SUCTION ROLLS

SUCTION ROLLS FOR COUCH, PRESS & FELT CLEANING

Philadelphia Paper Market Trend Favorable

While Demand for Various Standard Grades of Fine Paper Continues Light, Strength of Upswing Passes Strongest Expectations—Demand for Waste Paper Rather Restricted—Available Supplies Plentiful and Quotations Unchanged

[FROM OUR REGULAR CORRESPONDENT]

PHILADELPHIA, Pa., May 7, 1934—The expansion of business, which was enjoyed by those in the fine paper trade here, has continued to experience a lull in the last week. However, up until this time, the strength of the upswing had passed the most sanguine expectations, and, as one of the leading paper houses told your correspondent, the general tone of business is so far ahead of this same period last year, that the return of sales to their former encouraging level is expected within a very short time.

Waste paper prices developed practically no change of a definite character. Demand continued of restricted scope, and while there is available a plentiful supply, little or no interest is manifested in the collection of this material by the mills, due to the fact that the unemployed—rather than starve—are gathering in waste paper, even though the proceeds only net them the price of a loaf of bread.

Association Activities

May 2 was the date given as the time limit for filing open price reports on kraft and paper bags, and at the headquarters of the Philadelphia Paper Trade Association, Drexel Building, it was stated that very complete returns have been made on kraft, and these prices will be available this week; the bag open price reports are, in the main, yet to be heard from.

The following meetings are scheduled to be held this week at the headquarters of the Paper Trade Association: The Sub-Committee for the Philadelphia Area, middle southern New York and Middle Atlantic States Regional Committee, heretofore known as The Administrative Committee for the Trading Area, with Wm. S. Wilcox, chairman; the Box Paper and Specialties Committees. Richard Hartung, of A. Hartung & Co., is chairman of the Box Paper Committee, and Joseph E. Weaver, vice president of Garrett-Buchanan Company, is chairman of the Specialties Committee.

The coarse division with William H. Kilhour, president of Quaker City Paper Company, chairman, customarily holds its meetings at the Benjamin Franklin Hotel. However, if arrangements can be made whereby the association's headquarters can accommodate them, they plan to hold their next regular monthly meeting—which is Thursday of this week—and all subsequent meetings there.

On May 14 in the Willard Hotel in Washington, there will be a public hearing on the proposed Supplemental Code of Fair Competition for the Waste Paper Industry, The proposed Code would provide for the determination of the lowest possible cost in the event of an emergency due to destructive price cutting, and thereafter prohibit sales below such cost. It would also provide for the publication of prices of the various grades of waste paper when in the judgment of the Code Authority, such action becomes necessary. The labor provisions of the general Code are accepted by the trade, but it includes in its proposed Code trade practice rules applicable to the waste paper industry.

President Allen E. Whiting, of Whiting-Patterson Company, 320 North 13th street, announces the appointment of former Governor of Hawaii Lawrence M. Judd as first vice president, treasurer and manager of the Whiting-Patterson Company. Governor Judd's family for three generations was born and brought up in Hawaii; his grandfather went from Boston to Hawaii in 1828 as a medical missionary; later he resigned that position and became King Kamehameha Third's Prime Minister. father was Chief Justice of the Supreme Court of Hawaii under the old monarchy and Republic.

Governor Judd attended schools here, and upon his graduation about 27 years ago, secured his first position with a paper house in New York, of which Mr. Whiting was manager, which position he retained for two and one-half years. After much persuasion on the part of his folks to come home, he returned to Hawaii and obtained employment with a large commission house in Honolulu. He served several terms as a member of the Hawaiian Senate and one term as its president. President Hoover appointed Mr. Judd Governor of Hawaii, where he served for four years and eight months under Presidents Hoover and Roosevelt, retiring on March 1 last.

On account of his business acumen, he developed one of the best paper houses in Hawaii, and was director and manager of several departments of Theo. H. Davies & Co., Ltd., commission merchants.

News of the Trade

O. M. Steinman has joined the sales force of the Thos. W. Price Company. He will cover a very extensive up-State territory, including city of Reading. Mr. Steinman has an experience in the paper trade extending over a period of thirty years.

The latest acquisition to the membership of the Philadelphia Paper and Cordage Association, Inc., is the Albemarle Paper Manufacturing Company, Richmond, Va., of which H. W. Ellerson is president. This is one of the oldest manufacturers of kraft and blotting paper in this country, specializing in colored kraft and five grades of blotting paper.

Blair B. Stringfellow, Jr., will represent this company at the meetings of the association. Hooper Paper and Twine Company and Whiting-Patterson Company are distributors of their blotting paper.

Guy Beckitt, general manager of Beckett Paper Company, Hamilton, Ohio, in company with Morgan H. Thomas, president, and George W. Weaver, vice president of Garrett-Buchanan Company, enjoyed a splendid game of golf with Denny Shute during the week on the links of Llanerch Golf Club. Denny Shute defeated John Goodman, who is the present American open champion, in a special 72 hole match. Denny is leaving for Europe on June 15 to defend the British open air championship.

Sandy Hill Iron Works Elects Officers

At the annual meeting of The Sandy Hill Iron and Brass Works, held May 1, at the office of the Corporation, 27 Allen street, Hudson Falls, N. Y., A. J. Kennedy was re-elected president, Dr. Richard C. Tefft, Jr., of Boston, vice-president, and W. J. Elliot Simpson secretary and treasurer. Harry L. Broughton and Chas. W. Kellogg, together with the above named officers, were named as directors for the ensuing year.

Obituary

Harry D. Newell

[FROM OUR REGULAR CORRESPONDENT]

WABASH, Ind., May 7, 1934.—Harry D. Newell, aged sixty-one, for seventeen years general manager of the United Paperboard Company of Wabash died at his home here recently, after a brief illness. He was regarded as one of the most successful paper plant managers in the Middle West, retiring from the business when the plant was taken over by the American Container Corporation. He was a native of Massachusetts, coming to Wabash in 1917. He was a member of the Boston Shrine and a 32nd degree Mason. The widow survives.

Charles J. Meyer

[FROM OUR REGULAR CORRESPONDENT]

CARTHAGE, N. Y., May 7, 1934.—Charles J. Meyer, for many years prominent in paper mill circles, died last week at his home here following a brief illness. He was 79 years old. He embarked in business here early in life and the building and power rights were later sold to the Carthage Sulphite Company. After the sale he acquired a partnership in the Northern Bag and Paper Company, which occupied a prominent place until operations were suspended several years ago. For the past few years he had occupied the post of purchasing agent until illness forced his retirement. He is survived by two children.

George E. Lewis

[FROM OUR REGULAR CORRESPONDENT]

BROWNVILLE, N. Y., May 7, 1934.—George E. Lewis, former manager of the Brownville Board Company, died last week at his home here following a long illness. He was 83 years old. Ill health caused his retirement from active business several years ago. He served as manager of the local concern for a number of years and upon severing connections traveled extensively for several firms. He is survived by three sons.

Gair Takes Over Five Canadian Mills

Gair Company Canada, Ltd., a newly organized subsidiary of Robert Gair Company, Inc., has taken over the operation of the five paper mills of Canadian Paperboard, Ltd., it was announced here by E. Victor Donaldson, president of Robert Gair Company, Inc. The Canadian mills are located at Toronto, Montreal, Frankford and Campbellford.

Four of the mills manufacture paperboard while a second mill at Frankford is devoted to the production of ground wood pulp.

Mr. Donaldson also announced that George W. Brown, president and general manager of Firstbrook Boxes, Ltd., another Gair subsidiary, will serve also as vice-president and general manager of Gair Company Canada, Ltd., and that H. J. Daubney, formerly general sales manager in the United States for Price Brothers of Canada, will serve as general manager in charge of the Canadian mills. Charles E. Whitten, formerly secretary-treasurer of Canadian Paperboard, Ltd., will serve as secretary-treasurer of Gair Company Canada, Ltd.

With the taking over of the five Canadian mills, Robert Gair Company, Inc., now has seventeen plants devoted to the manufacture of paperboard and fabrication of paperboard products and has added materially to its productive capacity for paperboards of all types.

Indianapolis Demand Improves

[FROM OUR REGULAR CORRESPONDENT]

INDIANAPOLIS, Ind., May 7, 1934—While there appears to be no big increase in paper demand here, the market is sound fundamentally and in some lines prices appear to be very firm. The operation of code provisions continues to occupy a lot of thought and on the whole the thing is smoothing out in this section in nice shape. There has been a minimum of friction and an apparent desire on the part of all affected to live up to requirements 100 per cent.

Just now there is a lot of talk about the increase in demand for news print. During the early months of the year the larger Indiana papers showed a sizeable increase in lineage and their requirements increased, but the smaller papers in the more strictly agricultural communities showed but little betterment. During the last two weeks demand for print from these smaller communities has increased to a marked degree and now it is not unusual to see extra sections and inserts that have been unknown for three years. Prices are firm.

Much warmer weather in this entire section has aided the jobbers of summer specialties. The season has been held back because of a late spring, but dealers now are in the market and while orders are plainly for immediate demand and are not large, the jobbers are convinced there will be a steady demand from now on during the hot season.

Cellophanes, tissues and waxed papers continue active, particularly the latter, which in this section goes mostly to the baking industry. Some improvement is seen in the fine paper field, but not in the same degree as in other lines. Volume is much better than last year and prices are held firm. Paper board mills are operating nearly to capacity and executives report a good demand from a wide range of buyers with the range expanding right along.

Paper stock men here say there appears to be a trifle better mill demand for rags with new cotton rags and white shirt cuttings strong. The remainder of the market continues about the same as it has been during the last month. Demand for all kinds of building papers shows a marked increase during the last week or so, with roofings particularly strong.

Asks Bids for Waste Paper

[FROM OUR REGULAR CORRESPONDENT]

WASHINGTON, D. C., May 9, 1934—The Government Printing Office will receive bids on May 28 for the purchase of waste paper, paper shavings, etc. that may accumulate at the Printing Office during the fiscal year beginning July 1. Among the items on which bids will be received are included the following:

100,000 pounds white and colored shavings from blank books, blanks, etc.

100,000 pounds of white shavings from book papers, etc.

300,000 pounds of white shavings from book and mimeograph papers, etc.

100,000 pounds of white and colored shavings and clean waste.

200,000 pounds of news print and wood manila shavings and clean waste.

150,000 pounds of postal card bristol trimmings, etc.

200,000 pounds binders board, strawboard, and chipboard cuttings.

2,000,000 pounds paper wrappers from rolls flat stock, etc.

350,000 pounds printed paper waste, free from ground wood.

300,000 pounds discarded publications.

4,000 pounds wrapping twine and rope from bundles.

15,000 pounds waste and scrap book cloths.

Record of Long Services

Herbert Green, honorary treasurer of the Paper Makers' Association, of Hayle Mill, Maidstone, Kent, England, writes as follows:

"Mr. Fox, the editor of the technical section of our Paper Makers' Association, drew my attention yesterday to an article in the PAPER TRADE JOURNAL of April 5, 1934, with regard to claims for long service as paper makers and suggested to me that we could show better records from this mill.

"I have been looking up the records and find as follows:

"W. Weedon has worked in this mill for 60 years and is still going strong. H. E. Wood, head finisher, has worked in this mill for 59 years. H. Longley has worked in this mill for 59 years. Alf. Tucker has worked in this mill for 58 years. Arthur Tucker has worked in this mill for 56 years. E. Fullagar has worked in this mill for 53 years.

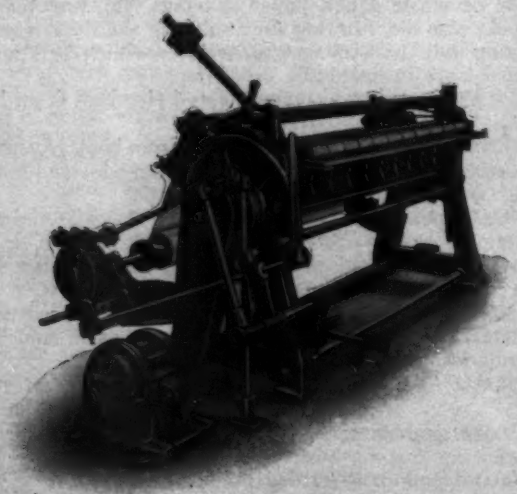
"All of the foregoing are still at work here and all, with the exception of W. Weedon, are members of the original society of paper makers.

"In addition to this, an old hand of ours, Fred Eve, who has recently retired owing to ill health at the age of 84 years, worked for us for 54 years and for many years before that at the next mill up the stream, the Great Ivy Mill, now demolished. He probably has a record beyond any of the others because the apprentices in the olden days generally began work at 14 years and he is now 84 years and was at work until a few weeks ago.

"In addition to the above, our foreman's father, W. F. Longley, who died some years ago, had worked for us continuously for 59 years at the time of his death in 1928. This record is from a hand made mill working five vats and employing about 100 people."

Slitting Machine for Specialty Rolls

The equipment illustrated is manufactured by the Cameron Machine Company, Brooklyn, N. Y., and is especially designed for high speed production of head rest rolls, shelf rolls and lunch rolls. It is designated as Camachine 40-1AF and it has produced as many as 10,000 head rest rolls in an 8 hour day and an average production of 50 gross per day is not difficult to maintain. The rolls are clean cut and uniformly wound from center to outer circumference. The length of paper in each roll is uniform also, as an automatic stop mechanism provides for this.



FOR HIGH SPEED PRODUCTION OF PAPER ROLLS

At the end of the run, the operator presses a foot lever to raise the riding roller, which permits the quick removal of the finished rolls. This with other time saving features is responsible for the high operating efficiency of this machine.

The machine is built in standard widths of 26, 32, 42, 52, 56 and 62 inches. It will accommodate a mill roll 32 inches in diameter and will rewind rolls to a maximum diameter of 10 inches. The standard cutters may be spaced to cut widths from ½ inch up. Special narrow slitters may be spaced to cut widths down to ¼ inch. A 5 hp. motor is ample to take care of a web as wide as 62 inches.

Fire at Champion Coated Plant

[FROM OUR REGULAR CORRESPONDENT]

DAYTON, Ohio, May 7, 1934.—Battling a blaze stubbornly for four hours before making strides toward overcoming it and, strangely as it may seem, holding the loss to a comparatively small amount, was the experience of the Hamilton fire department last Saturday at the plant of the Champion Coated Paper Company.

Two alarms were sounded, the first at 12:57 A. M., and the second at 1:15 A. M., when Fire Chief William Conlin ordered another company to the scene as it appeared headway was being made by the flames, which it was then feared would get out of bounds. As it was, the loss was held to approximately $2,000, largely to paper stock.

The fire started in the paper stock room in the East mill. The flames shot from the first floor to the roof, following a shaft near the boiler. Almost the entire East mill was filled with smoke which at times became so dense that the work of the firemen was handicapped.

Although the blaze was believed to have been under control in less than an hour after the department arrived, all fire companies found it necessary to continue their battle until 5 A. M.

Foster Wheeler Acquires Ruths Steam Storage

The Foster Wheeler Corporation, 165 Broadway, New York City, has taken over exclusive rights for the sale and manufacture of the Ruths Steam Storage Systems in the United States and Canada. Ruths Accumulators will complement the present extensive line of Foster Wheeler power plant equipment. Mr. G. M. Cameron, formerly manager of Ruths Steam Storage Company, will be manager of the Ruths Accumulator Division of Foster Wheeler.

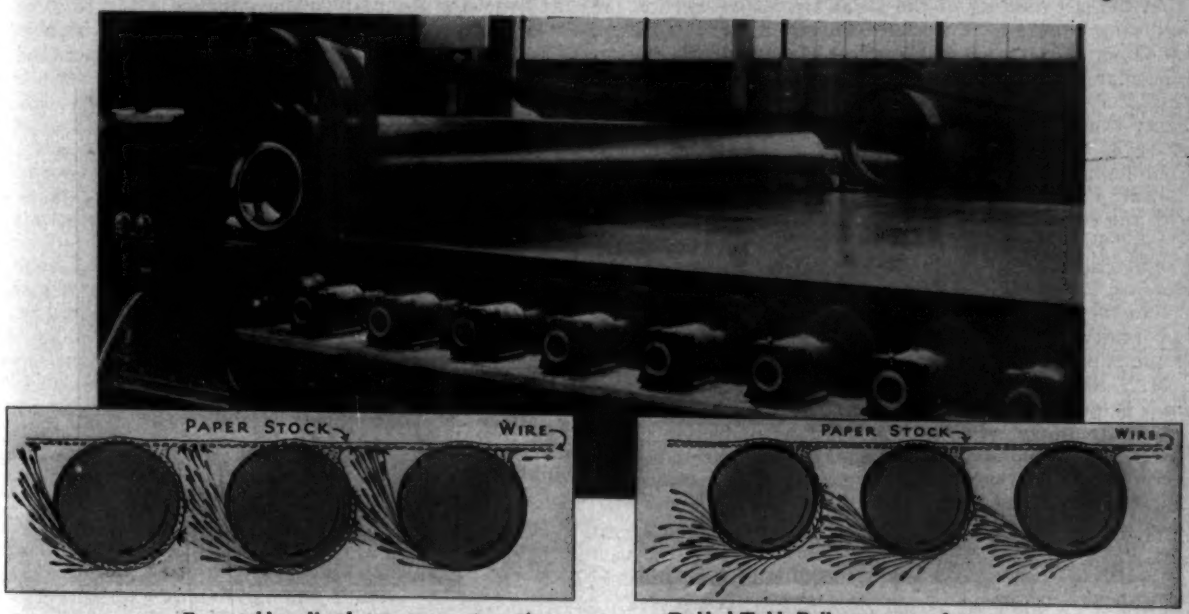
Ruths Steam Storage System is a means of storing up steam during periods of light demand for use in periods of heavy demand thereby equalizing the boiler load. This permits higher boiler efficiencies and larger daily boiler output per unit of installed boiler capacity. This system is applicable to many industrial plants and has a special field in certain industries such as pulp and paper mills, food and packing plants, breweries, distilleries and other industries where large amounts of low pressure steam are used for process work.

Consolidated Products Co. Expands

The Consolidated Products Company, Inc. has made alterations and extensions to its suite on the 20th floor of 15 Park Row, New York City, adding a number of new private offices and enlarging its executive and clerical space.

The firm reports a more widespread demand for used machinery, and this expansion of office space has been arranged to take care of the increased volume of business, and to enable it to be of greater service to the trade.

Where only RUBBER fills the bill...and reduces it!



Brass table rolls throw water up against the bottom of the wire.

Dukbak Table Rolls cast water down, without disturbing formation.

FOR ball bearings, or milk bottles, or shoe laces—rubber simply won't do. But when it comes to coverings for table rolls—that's another story. Here's one place where the peculiar properties of rubber enable it to do a job better than any other material.

The new rubber table roll covering known as Dukbak has such a low affinity for water that it casts water down—not up against the bottom of the wire to cause spotty formation.

With Dukbak table Rolls, greater and more uniform water removal is assured . . . dynamic balance is preserved . . . speed is maintained and the finished sheet is better.

And Dukbak, like all other Goodrich paper mill roll coverings, inherits tremendous construction advantages from the exclusive Goodrich Vulcalock process of bonding rubber to metal. This means:

1. The flexible hard rubber cover will not crack. If the roll is bent by dropping, it may be straightened as easily as if it were metal alone.

2. The use of steel tubing, stronger and stiffer than brass and much lighter in weight, becomes practical.

3. The ends of the roll are sealed by Vulcalock, preventing the entrance of moisture and corrosion troubles. Because of this seal, cast iron gudgeons can be used, rather than the heavier brass.

Goodrich rolls can do for you what they are doing for others—*give you better paper.* Write for prices and full information. The B. F. Goodrich Rubber Company, Mechanical Rubber Goods Division, Akron, Ohio.

ROLL COVERINGS—BELTING—HOSE—MISCELLANEOUS RUBBER PRODUCTS

Goodrich ALL *goodness goodness* IN RUBBER

DUKBAK *Rubber Table Rolls*

TAPPI Notes

The next meeting of the New England Section of TAPPI will be held at the Nonotuck Hotel, Holyoke, Mass., Friday evening, May 18, 1934, at 6:30 P. M.

The Delaware Valley Section of TAPPI will hold its next meeting Friday, May 25, 1934, at 6:30 P. M., at the Engineers Club, Philadelphia, Pa. The speaker will be Dr. R. E. Rose, director of research for E. I. du Pont de Nemours.

At the last meeting of the Delaware Valley Section the following officers were elected: Chairman, H. P. Cannon, Container Corporation of America, Manayunk, Pa.; Vice-Chairman, H. C. Schwalbe, Dill & Collins, Inc., Philadelphia, Pa.; Secretary-Treasurer, J. C. Harper, West Jersey Paper Corporation, Camden, N. J.; Executive Committeemen: W. R. Maull, Dill & Collins, Inc., and G. E. Landt, Continental-Diamond Fibre Company, Bridgeport, Pa.

J. H. Fritz, formerly with Dill & Collins, Inc., is now with the National Oil Products Company, Harrison, N. J.

John F. Carroll, formerly of the George W. Wheelwright Paper Company, is now production manager of the Reading Paper Mills, Reading, Pa.

Randall H. Doughty, formerly of the Forest Products Laboratory, Madison, Wis., has joined the research staff of the Fitchburg Paper Company, Fitchburg, Mass.

M. S. Shenk, formerly with the National Adhesive Company, is now with Stein, Hall & Co., New York.

J. H. Dempsey, who has been working under Dr. C. H. Herty at the Pulp and Paper Laboratory of the Industrial Committee of Savannah, has accepted a position with the Champagne Paper Company, of New York, N. Y.

Bids and Awards for Government Paper

[FROM OUR REGULAR CORRESPONDENT]

WASHINGTON, D. C., May 9, 1934—The Government Printing Office has received the following bids for 125,000 sheets of 22½ x 28½ white cardboard; Champion Coated Paper Company, at $20.43 per M sheets; Carter, Rice & Co., $20.44; R. P. Andrews Paper Company, $20.43; Perkins-Goodwin Company, $19.92; Reese & Reese, Inc., $20.43; Dobler & Mudge, $20.43; Barton, Duer & Koch Paper Company, $22.22; and Whitaker Paper Company, $20.43.

The R. P. Andrews Paper Company has been awarded the contract for furnishings the Government Printing Office with 5,000 pounds (35,000 sheets) of 28 & 34, 23 per cent rag white ledger paper at 12.61 cents per pound, bids for which were received on April 25.

Paper Merchants, Inc., Expanding

Paper Merchants, Inc., 140 N. Sixth street, Philadelphia, believes that now is the time to make the necessary moves for expansion and improvement to take care of increased business, both present and future.

Among the activities of Paper Merchants, Inc., already carried through on this policy, is the change to general agent for the Champion Coated Paper Company. Other new lines are being taken on to round out the stocks carried.

Provenworth Tinted English Finish, by P. H. Glatfelter Company, and Media Manifold, by Brownville Paper Company, are announced as new agency lines carried by Paper Merchants, Inc.

This is following out a definite and planned program of expansion and extension of lines and facilities to care for the increased business enjoyed by this company, and also to enable the company to better serve its customers.

A. W. Nickerson Opens Consulting Office

A. W. Nickerson, recently of the research department of the Robert Gair Company and formerly consultant to several chemical manufacturers, has established an office at 501 Fifth avenue, Suite 2107, New York, N. Y., as a chemical engineer and consultant in paper making and converting.

Mr. Nickerson, who graduated from the University of Maine in 1916, has been engaged in the pulp and paper industry for the past eighteen years.

The new Converting and Consuming Division of the Technical Association of the Pulp and Paper Industry

A. W. NICKERSON

is under the direction of Mr. Nickerson, as general chairman. This division includes the TAPPI Coating, Laminating, Container and Graphic Arts Committees.

Recently Mr. Nickerson was elected president of the Pulp and Paper Alumni Group of the University of Maine. This organization is doing much to enable Maine to prepare well qualified men for the paper industry.

British Columbia To Meet in Montreal

[FROM OUR REGULAR CORRESPONDENT]

MONTREAL, Que., May 7, 1934.—Holders of British Columbia Pulp and Paper Company 7 per cent general mortgage sinking fund bonds have been notified that a meeting will be held in Montreal on May 22 next for the purpose of voting for or against a resolution providing for the postponement of interest between May, 1933, and November, 1934, to May 1, 1936. Interest of 7 per cent will be paid on the unpaid interest, while the company reserves the right to make prepayment from time to time on 30 days' notice. In addition the bondholders will consider the advisability of cancelling sinking fund payments which fall due in 1935, 1936 and 1937.

The Burlington Zephyr

The American Sheet and Tin Plate Company, Pittsburgh, Pa., is sending out an attractive and interesting booklet describing the Burlington Zephyr stainless steel train built by the Edwin G. Budd Manufacturing Company of Philadelphia, Pa. Certain stainless steel materials produced by the American Sheet and Tin Plate Company were used for important parts in the construction of this remarkable innovation in the transportation field.

Progress in Paper Testing Standards

The further development during the past year of paper testing standards by the Paper Testing Committee of the Technical Association of the Pulp and Paper Industry, was reported at the recent annual meeting of the association by the committee chairman, B. W. Scribner, of the Bureau of Standards.

Methods for ink absorption of blotting paper, water absorption of bibulous paper such as toweling, and water resistance of paper having a medium degree of resistance, were adopted by association vote as official standards. Further experimental study by a subcommittee during the year showed that the method for water resistance, which is based on Carson's dry-indicator method, could be used satisfactorily, with some modifications, for papers and paper boards having a high degree of water resistance. Such products present some difficulty since loss of moisture from the surface containing the indicator, and lateral absorption of water must be avoided. Permeability to liquids and gases is an important property of most kinds of papers.

Changes in the tentative alpha cellulose and copper number methods were suggested to increase their scope to include papers containing lignified fibers, and to provide for papers having very high copper numbers. The subcommittee on chemical methods found that the present method for copper number can not be used satisfactorily for papers in which zinc sulphide is used as an opacifier, and that uneven staining of the lead acetate test paper in the determination of active sulphur could be overcome by adding a condenser to the testing apparatus and boiling the mixture of paper and reagents. A revision of the standard method for amount of mineral coating was recommended. This consists of the use of trypsin to loosen the coating, as suggested by Sutermeister and Porter, as this is more effective than ammonia for resistant coatings.

Progress was made in revision of the standard methods for sampling, conditioning, basis weight, tensile strength, bursting strength, and tearing strength, to increase their accuracy. Study of the use of weight factors in fiber micro-analysis is still in progress.

The standard testing methods, recommended practices, and specifications of the association are now issued in loose-leaf form and can be obtained from the secretary, R. G. McDonald, 122 East 42nd street, New York City.

Fire at Alton Box Board Plant

[FROM OUR REGULAR CORRESPONDENT]

INDIANAPOLIS, Ind., May 6, 1934—Fire of undetermined origin swept the raw material sheds of the Alton Box Board and Paper Company plant at Lafayette, Ind., recently and destroyed the building and 200 tons of material. Some damage to the plant was had, but because it is across railroad tracks from the raw material department, the damage was not sufficient to halt operations. The loss will be more than $5,000 most of it covered by insurance. Several railway freight cars on the factory siding containing additional raw material, were moved before being damaged.

Two Emerson Jordans for Carthage Mill

The Emerson Manufacturing Company, Lawrence, Mass., recently received an order for two Emerson Jordans to be installed in the Carthage, Ind. plant of the Container Corporation of America. The Carthage mill is being changed over from a 28-ton board mill to a modern plant with a daily capacity of 85 tons of corrugated strawboard.

Mechanical Transmission of Power

Robert Drake was engaged for three years in writing the book entitled "50 Reports on the Mechanical Transmission of Power from Motor Drive to Industry" and the total cost was somewhere around $16,000.00, paid for by 35 manufacturers of leather belting and mechanical power transmission equipment by subscription. 25,000 copies were printed and of these some 18,000 have been mailed out to plant superintendents, master mechanics, plant engineers, and engineers, etc., of leading plants, and consulting engineering companies.

Additional copies can be secured for next two months from American Leather Belting Association, 41 Park Row, New York, at 25 cents per copy to cover postage.

The book contains 224 pages with complete table of contents and index. It is entirely free from propaganda and covers the practical plant application operation, and maintenance of all kinds of motor drives including multiple V belts, belting, chains and gears. It covers trouble elimination and contains a wealth of practical information that is much needed and on which there was no authoritative practical work in existence before.

The book covers the entire subject of individual motor drives and modern group drives, showing that some combination of both systems are needed in most plants and what cost savings can be affected.

Low Rates for Superintendents' Meeting

Exceptionally low hotel rates and registration fee are significant features of the Fifteenth Annual Convention of the American Pulp and Paper Mill Superintendents' Association, which will hold forth at Poland Spring House, Poland Spring, Maine, on June 20, 21 and 22, 1934.

The special hotel rates offered to superintendents and their guests are:

Room with bath, $7.00 per day per person; room without bath, $6.00 per day, per person. And these rates include ALL meals, luncheons and banquets.

The registration fee for members and for non-member superintendents and other paper and pulp makers is $3.00 each. The registration fee for representatives of affiliated industries is $8.00 per person. There is no registration fee for the ladies.

Reservations by mail or telegraph can be made to George W. Craigie, Executive Secretary, Box 36, Cumberland Mills, Maine.

Honor John Sheehy at Farewell Party

MENOMINEE, Mich., May 7, 1934—John Sheehy, 344 Ludington avenue, superintendent of the Hoskin-Morainville Paper company's plant here, who recently resigned his position, was tendered a farewell party by employees of the company in Anderson's hall, Marinette, last Saturday night, April 28.

Mr. Sheehy was presented by his friends with a watch. Mrs. Sheehy was presented with a corsage bouquet. Mr. Sheehy has been with the company since last August. The farewells at Saturday's dancing party in his honor bore witness to the high regard in which he was held by other employees of the company.

Lafayette Box Board Co. Reorganizes

Officials of the Lafayette Box Board and Paper Company, Lafayette, Ind., have filed reorganization papers with the Indiana secretary of state listing 5,000 shares of capital stock having no declared par value.

CONSTRUCTION NEWS

A Summary of Vital Facts Regarding Construction, Finances and Operation of Paper Mills

Construction News

Rochester, N. Y.—The Lawless Paper Company 126 North Water street, has approved plans for new building at East Rochester for storage and distributing service, to be one-story and basement, 40 x 125 feet, reported to cost close to $25,000, with equipment. General contract has been let to the Gorsline & Swan Construction Company, 6 Pearl street, city, and superstructure will be placed under way at early date.

Carthage, N. Y.—The Cell-O-San Corporation, recently organized with capital of $20,000, plans operation of local plant for manufacture of paper boxes and containers. Lawrence Sochia and William O. Adner, both of Carthage, are principal incorporators of new company.

Ampthill, Va.—The du Pont Rayon Company, 350 Fifth avenue, New York, N. Y., manufacturer of cellulose rayon products, has begun excavations for initial units of plant expansion program at Ampthill, near Richmond, Va., designed to increase output by about 50 per cent. Several multi-story structures will be built. Work calls for relocation of city wharves as well as railway freight classification yards, the land to be used for new mill units. Entire program is reported to cost over $3,500,000, with machinery.

Newark, N. J.—The Central Paper Company 421 Lafayette street, has leased property at 418-22 Washington street, formerly used by the Banister & Pollard Company, hardware products, and will occupy for new storage and distributing building and sales headquarters. The unit is three-story, with one-story structure adjoining, totaling about 29,600 feet, all of which will be used by the leasing company, which will expand operations at new location.

Cleveland, Ohio—The Ajax Paper Tube Company, Inc., has been organized by Arthur F. Grimmer and Carl L. Erb, 706 Engineers Building, city, with capital of 250 shares of stock, no par value, to operate a local plant for the manufacture of paper tubing and kindred paper products.

Drummondsville, Que.—The Dennison Manufacturing Company Ltd., Drummondsville, manufacturer of paper tags, labels, etc., a subsidiary of the Dennison Manufacturing Company, Framingham, Mass., is considering an expansion and improvement program to increase production over 30 per cent. Additional equipment will be installed.

Chicago, Ill.—Gaul & Ingalls, Inc., 1531 Kingsbury street, paper stocks, has leased a floor in building at 1501 South Laflin street, totaling about 30,000 square feet of floor space, and will occupy at early date for new storage and distributing building, increasing present operations.

New York, N. Y.—The Moulded Pulp Corporation, 60 East 42nd street, New York, manufacturer of wood pulp and paper products, has arranged for a preferred stock issue of $300,000, portion of fund to be used for general financing, additional working capital and expansion in operations. Paul Plunkett is president.

Newton, Mass.—The Press Seal Box Company has been formed by Frederick A. Soucie, 168 Mystic Valley parkway, Arlington, Mass., and associates, with capital of 1,000 shares of stock, no par value, to operate a local plant for the manufacture of special paper and paperboard boxes and containers. Mr. Soucie will be treasurer of new company. Arthur M. Griggs is president.

Philadelphia, Pa.—The Matthias Paper Corporation, 143 North Fifth street, paper stocks, has arranged for lease of floor in building at 421-27 Arch street, totaling about 10,000 square feet of floor space, and will occupy at early date for new storage and distributing headquarters, expanding present operations.

Chicago, Ill.—The Container Corporation of America, Inc., 111 West Washington street, manufacturer of corrugated and other paper containers, boxes, etc., has been advancing production schedules at plants, and is now giving employment to close to normal working quotas. Sales for the first quarter of 1934 are about 75 per cent in advance of those for the corresponding period of a year ago. Walter P. Paepcke is president.

Battle Creek, Mich.—The Michigan Carton Company has work nearing completion on improvements in plant, recently referred to in these columns, for increased production service. F. J. Skidmore & Son, Battle Creek, are general contractors.

Montreal, Que.—Robert Gair Company, 155 East 44th street, New York, N. Y., has concluded arrangements for acquisition of plants and property of the Canadian Paperboard Ltd., manufacturer of corrugated and other paper boxes and containers, folding cartons, etc., similar to line of purchasing company, and will operate for new Canadian branch plants. The mills are located at Montreal, Frankford, Campbellford and Toronto; the last three noted being in Ontario. The acquiring company has formed a new Canadian subsidiary to take over and operate the plants, to be known as the Gair Company of Canada, Ltd. It is proposed to develop properties to maximum capacity, with future expansion as may be necessary.

Neenah, Wis.—The Neenah Paper Company, Commercial street, soon begins superstructure for new addition, 60 x 100 feet, recently referred to in these columns, to be three-story, instead of one-story, as previously announced, for storage and distributing service. It is estimated to cost close to $25,000, with equipment. C. R. Meyer & Sons Company, 50 State street, Oshkosh, Wis., are general contractors.

Miami, Fla.—George Levinson, Miami, has leased building at 140-46 N. W. First street, and will remodel and equip for new local plant for manufacture of a line of corrugated and other folding paper boxes and containers. A list of equipment to be installed is being arranged. Frank J. Corr, Miami, is interested in project and will be one of heads of business. It is proposed to have factory ready for service at early date.

Los Angeles, Cal.—The Western Waxed Paper Company, 910 East 61st street, manufacturer of waxed and other processed papers, has taken out a permit for new addition to plant and will soon begin superstructure. It will be one-story, 100 x 150 feet, estimated to cost over $30,000, with equipment. General contract was recently let to Lindgren & Swinerton, Inc., 523 West Sixth street, Los Angeles. George J. Fosdyke, 112 North Main street, city, is consulting engineer.

Elgin, Ill.—The Watch City Paper Box Company, 21 North Union avenue, recently organized with capital of 30 shares of stock, no par value, plans operation of local plant for production of line of paper boxes and containers. New company is headed by Fred R. Grotzka and William Torterello.

Hopewell, Va.—In connection with plans for reorganization, the Hummel-Ross Fibre Corporation, manufacturer of kraft papers, paperboard products, etc., is arranging for a bond issue of $400,000, proceeds to be used for general financing, operations, etc. J. P. Hummel is president.

Paw Paw, W. Va.—The Industrial Rayon Corporation, West 98th street and Walford avenue, Cleveland, Ohio, manufacturer of cellulose rayon products, is reported negotiating for tract of about 250 acres of land on the Potomac River, near Paw Paw, as site for proposed new mill, consisting of several units, with power house, machine shop, pumping station and other mechanical structures, estimated to cost close to $1,000,000. As recently reported in these columns, company has also been considering sites for plant in vicinity of Fort Wayne, Ind., as well as at Coshocton, Ohio. Arrangements are being made for increase in capital from 200,000 to 1,200,000 shares of stock, no par value, portion of proceeds to be used for mill expansion program noted. Hiram S. Rivitz is president.

Baltimore, Md.—The Transparent Container Corporation, 1716 Baltimore Trust Building, recently organized, plans operation of local plant for manufacture of paper boxes and containers of special type. The incorporators of new company include John N. Mackall and Henry K. Smart.

Buffalo, N. Y.—The Buffalo Waste Paper Company, 98 Terrace street, has leased a floor in building at 407 Niagara street, and will use for expansion in storage facilities.

Castleton-on-Hudson, N. Y.—The Fort Orange Paper Company has advanced production schedule and is now giving employment to about 450 employes in all departments. It is expected to hold to this basis for an indefinite period. Company has recently announced a 10 per cent wage advance, affecting all workers at the mill.

Yonkers, N. Y.—The Yonkers Hat Box Company, Inc., has been organized by Samuel Saveth, 117 Stanley avenue, Yonkers, and associates, to operate a local plant for the manufacture of cardboard boxes and other paper containers.

Cornwall, Ont.—Courtaulds, Ltd., manufacturer of cellulose rayon products, is completing a large new addition to local mill, and expects to have the unit ready for production in May. The new unit will be equipped to increase former plant production about 50 per cent, making an annual rated output of 9,500,000 pounds. The plant expansion will represent an investment said to be over $600,000, with machinery. General contract for building has been carried out by the Foundation Company of Canada, Ltd., Toronto, Ont.

Montreal, Que.—Bowater's Canadian Paper Corporation, Ltd., Montreal, recently organized as a Canadian subsidiary of Bowater's, Ltd., London, England, newsprint manufacturer, is arranging for a bond issue of $11,061,600, in connection with proposed acquisition of mills and property of Price Brothers & Company, Ltd., Kenogami and River Bend, Que., for pulp and paper production. The new organization proposes a general expansion and improvement program, including the development of water and electric power resources for mill service. F. C. Dobell, Montreal, is temporary chairman of the new company; J. C. Kemp is secretary and treasurer.

Port Alfred, Que.—The Consolidated Paper Corporation, Ltd., Montreal, has resumed operations at newsprint mill at Port Alfred, placing two of the four machines at the plant in service. Employment will be given to about 325 men for initial operations. The plant has been closed since last October. It is proposed to increase production at mill at early date.

Istanbul, Turkey—The Ministry of Industry, Government of Turkey, has plans nearing completion for remodeling a former large Government building about a mile from the city, on the Bosphorous Strait, for a new pulp and paper mill. Machinery for installation will be purchased in near future. Entire project is reported to cost over $300,000, with equipment.

New Companies

Jersey City, N. J.—The American Pulp Corporation has been chartered with capital of 2,500 shares of stock, no par value, to manufacture and deal in pulp and paper products of various kinds. New company is represented by the Corporation Trust Company, 15 Exchange place, Jersey City.

Indianapolis, Ind.—Simplified Systems, Inc., 309 Holliday Building, has been incorporated with capital of 100 shares of stock, no par value, to manufacture loose-leaf paper products and other commercial paper specialties. The incorporators are C. W. Richardson, J. K. and I. G. McVay, all of Indianapolis.

Worcester, Mass.—The Hobbs Manufacturing Company has been incorporated with capital of 2,000 shares of stock, no par value, to manufacture paper box machinery and equipment. Howard Ashey, Worcester, is president and treasurer; and Frederick A. Jones, first vice-president.

Lynn, Mass.—The Mutual Paper Company has been incorporated with a capital of $100,000, to manufacture and deal in paper products. David Rabinowitz is president, and Nathan Schwartz, 130 Eastern avenue, Lynn, treasurer and representative.

Marion, Ind.—The General Paper Products, Inc., has been chartered with capital of $100,000, to manufacture and deal in paper products of various kinds. The incorporators are W. L., V. C. and Schuyler B. Miller, all of Marion. Last noted is company representative.

St. Louis, Mo.—The Three Points Corporation has been organized with capital of $10,000, to manufacture and deal in pulp and paper products. Principal incorporators are Clyde J. Vollman and Charles W. Barth, 5851 Nina place, St. Louis. Last noted is representative.

New York, N. Y.—The Victoria Agencies, Inc., has been incorporated with capital of $10,000, to deal in pulp and paper products. New company is represented by Edward R. Wardwell, 15 Broad street, New York.

They *Both* Profit from

How Socony-Vacuum can help get the most out of Your Plant in 1934

BOTH MEN AND MANAGEMENT are vitally interested in obtaining uninterrupted production from their machinery.

That is why management in the leading plants of the country invited us to cooperate with their technical staffs in a critical study of their equipment. One indication of the increasing attention being given to correct lubrication is the fact that new accounts on our books showed an unusual increase in 1933.

As a means of aiding materially in insuring uninterrupted production and maximum efficiency of equipment, there are four major factors in which correct lubrication can lower operating costs and insure adequate returns on investments. These factors are:

1—A reduction of power costs
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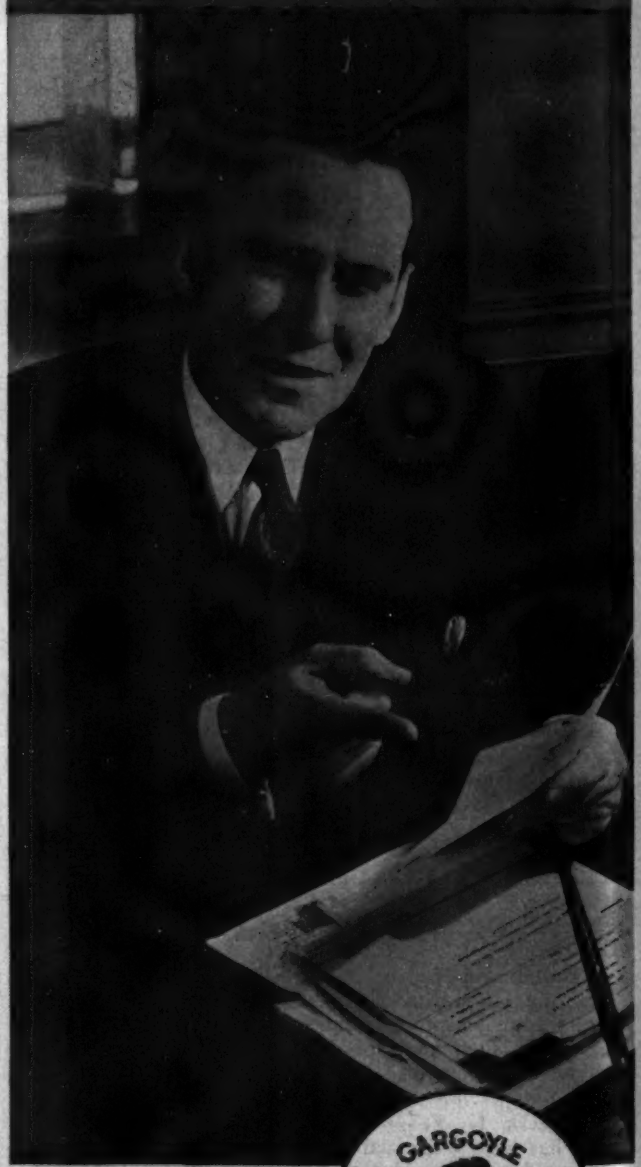

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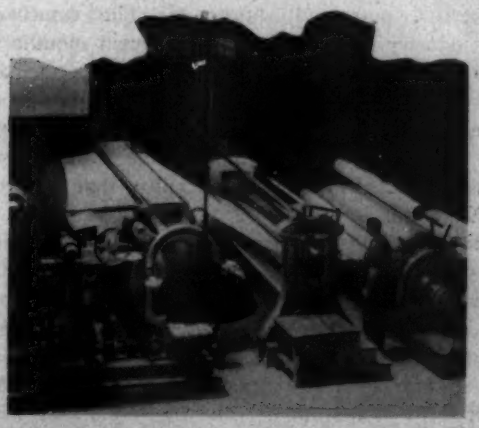
Reduced Lubrication cost (4 mos.)	405.00

In addition to these savings there was a reduction in maintenance cost for the six-months period which was in a large part the result of using the correct oils.

The annual oil bill is approximately $3,000. So this saving paid the entire oil bill.



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COMING EVENTS

American Pulp and Paper Mill Superintendents' Association, annual convention. Headquarters Poland Spring House, South Poland, Me., June 20-22, 1934.

Technical Association of the Pulp and Paper Industry, Fall meeting. Headquarters Multnomah Hotel, Portland, Ore., September 10-13, 1934.

HIGHER NEWSPRINT PRICES

It is perhaps a healthy sign, says the Montreal correspondent of the PAPER TRADE JOURNAL, that the prevailing topics in newsprint circles are no longer concerned with bank loans and receiverships, but with higher prices and prospective pulpwood shortages. The comeback which the industry has been staging in recent months in the matter of production is nothing short of spectacular, it having reached for the first quarter of the year 93 per cent of the output for the same period in the peak year of 1929. A drawback has been that in the same period revenue has amounted to only 53 per cent of that achieved in the 1929 period.

With this mounting production has come a steady increase in the cost of production in respect to both materials and labor. The efforts of most of the mills for a long time past has been to turn their assets into money, and particularly to convert into cash their large wood piles. Consequently pulpwood cutting, which costs money, has been reduced to a minimum, with the result that with production again on a large scale, the possibility of a pulpwood shortage looms ahead. Replenishing the wood piles can only be achieved at a higher cost than that prevailing, so that some advance in the price of newsprint is foreshadowed for the more or less immediate future.

It is understood in Montreal, according to our correspondent, that any advance before the end of 1934 can only come if two of the largest operators who have form contracts with their customers at the prevailing price extending until January 1st, can prevail on the publishers to permit of an upward revision because of increased costs in the industry.

TO HOLD PAPER EXPOSITION

The Eleventh National Exposition of Power and Mechanical Engineering will be held this year. The last Exposition was held in 1932. Grand Central Palace, New York, will again be the location, and the dates selected are December 3 to December 8, inclusive. Coming during the first week of December, 1934, the Exposition will adhere to its usual convention and will take place during the same week that the American Society of Mechanical Engineers holds its annual meeting in New York. Concurrence, in time and city, of these events is a matter of important convenience to the thousands from all over the United States who regularly attend both.

Responsive to the new trends in expositions the Eleventh National Exposition of Power and Mechanical Engineering will feature dynamic and graphic display. He who runs may not only read, but may learn through seeing mechanisms in operation. Thus certain technical advantages can best be demonstrated. This is responsive, or reciprocal, to experience of the past year which has revealed a great increase of interest in industrial expositions. There is active interest on the part of the natural audience. On the other hand, the depression-developed keen sight of some new exhibitors, now leads them to analyze and properly to relate the salient features of their subject in a manner technically concise, but dramatically interesting.

Dynamic display succeeds static presentation. The natural desire, of engineer and layman, to see how equipment works, is being gratified. Utilizing the paramount appeals of expositions—eye appeal and the ability actually to examine and compare—the Eleventh National Exposition of Power and Mechanical Engineering works in a field where the new spirit of presentation can produce thrilling results.

The time of the exposition is particularly appropriate. Following years of reduced production and accompanying machine obsolescence, present stimulated production compels equipment replacement and an interesting amount of new machine installation. Thousands, interested in these trends, make of the exposition a Mecca, not only because it is interesting and educational—it is an experience upon which professional engineers rely. Particularly they respond to its value as a setting in which comparisons can so readily be made, in one location, in brief time. Responsible for engineering design and for mechanical equipment purchase, engineers can here weigh the comparative values of products of an established class with those of potential successors. In doing this at the exposition they are unobtrusive and undisturbed.

Power generation and distribution, engines and auxiliaries, electrical equipment and elevators, boilers, pumps,

air compressors, refrigeration equipment—in every class, exhibits are being built to show the most valuable and the newest improvements. Exhibitors have now more in mind the viewpoint of engineers who attend the exposition, critically evaluating process design, to decide upon equipment specifications. Presented, in addition to every phase of power generation and mechanical engineering machinery, there will be innumerable auxiliary subjects of interest. Among these, to name only a few, are piping and valves, instruments of precision, materials handling machinery, fire protection equipment, metals and metallurgy, and ceramic materials including fire brick and cements.

For this year's exposition an unusual responsiveness is indicated. Interest shown at this early date and the fact that a number of exhibitors are already at work on interesting displays means that companies are working hard to make good displays. They have reserved their space so that they can develop their exhibits most effectively with the exact floor environment in mind.

Public reaction has been demonstrated, this year, to be enthusiastically favorable to the idea of post-depression expositions as an aid to more rapid recovery. Recent successful experiences of other expositions prove this point. During the past few months expositions at Grand Central Palace, under the same direction, have achieved success, spontaneous in fields as divergent as heating and ventilating, chemicals, hotels, and flowers. Now, not only are the crowds more responsive, the sales inquiries greater, and the sales record accelerated, exhibitors themselves seem to be winning this just reward through making their presentations dynamic and interesting.

Gardner-Richardson Co. Gets Dicision

[FROM OUR REGULAR CORRESPONDENT]

DAYTON, Ohio, May 7, 1934.—Thomas Harvey, Harold A. Harvey and George E. Harvey, minority stockholders in the Gardner and Harvey Company, paper manufacturers, Middletown, are held not entitled to relief sought, in their suit against the Gardner-Richardson Company, which is the successor to the firm, according to an opinion by Judge E. J. Kautz, in common pleas court.

The sum of $457,895.79 was asked by the plaintiffs as a fair value of their holdings in the company before a merger and reorganization June 13, 1932, by which they contended, their interests were seriously hurt. They refused to accept an exchange of stock as set up in the reorganization plans.

Judge Kautz held that the "case presented a problem exceedingly difficult of solution." The well prepared briefs of attorneys presented a question as to whether there was a reorganization within the meaning of the Ohio general code, he held.

"In my opinion," the court decision reads, "there was no reorganization within the meaning of the statutes of Ohio."

Hearing in the case was held February 9, 1933, and subsequently attorneys for both parties to the suit prepared and filed voluminous written arguments and citations.

The plaintiffs, following the decision, filed a motion for a new trial.

New TAPPI Members

The executive committee of the Technical Association of the Pulp and Paper Industry has announced the following elections to membership:

Norman I. Bearse, chemist, Lowe Paper Company, Ridgefield, N. J., is a 1921 graduate of the University of New Hampshire and was formerly assistant chemist for the Nashau Gummed and Coated Paper Company, Nashua, N. H.

E. T. A. Coughlin, director of research, Pettengill, Inc., Chicago, Ill., is a 1913 graduate chemical engineer of the University of Maine. He was formerly technical director and superintendent of the coating division of the Allied Paper Mills, Kalamazoo, Mich.; general manager and superintendent of the Franklin Coated Paper Company, Franklin, Ohio; mill manager of the N. J. Coated Paper Company, Montclair, N. J.; technical director of the W. F. Hall Printing Company, Chicago. Mr. Coughlin was formerly president of the American Pulp and Paper Mill Superintendents Association.

James M. Dempsey, Champagne Paper Company, New York, was recently assistant to the chief chemist of the Pulp and Paper Laboratory of the Industrial Committee of Savannah. Mr. Dempsey attended the Presbyterian College, Clinton, S. C., and was formerly employed as a chemist by the District of Columbia Paper Manufacturing Company, Washington, D. C.; Nekoosa-Edwards Paper Company, Port Edwards, Wis., and the Kalamazoo Vegetable Parchment Company, Parchment, Mich.

Paul W. Hardesty, chemist, Brownville Board Company, Brownville, N. Y., is a 1934 graduate of Syracuse University.

Lawrence Lynd, salesman, R. T. Vanderbilt Company, New York, N. Y., attended St. Joseph's University and was formerly a salesman for E. C. Atkins Company, Hamilton, Ontario, and John W. Bolton and Sons, Lawrence, Mass.

Carl D. Roess, chemist, Wrenn Paper Company, Middletown, Ohio, is a 1928 graduate of Capital University and received his master's degree in chemical engineering in 1929 from Ohio State University. He was formerly an assistant chemist with the Mead Corporation, Chillicothe, Ohio.

Olney R. Steffens, salesman, Penick and Ford Sales Company, New York, N. Y., attended Northwestern Military and Naval Academy and has been with Penick and Ford for the past seven years.

Richard M. Upright is a student at the New York State College of Forestry, Syracuse, N. Y.

Code Hearing Set for Waste Paper Trade

WASHINGTON, D. C., May 9, 1934—Announcement has been made by the National Recovery Administration that a public hearing would be held May 14 in the Willard Hotel, on the proposed supplemental code of fair competition for the waste paper industry. This industry is a subdivision of the scrap iron, non-ferrous scrap metals and waste materials trade.

The proposed code would provide for the determination of the lowest possible cost in the event of an emergency due to destructive price cutting, and thereafter prohibit sales below such cost. It would also provide for the publication of prices of the various grades of waste paper when, in the judgment of the code authority such action becomes necessary.

The labor provisions of the general code are accepted by the trade, but it includes in its proposed code trade practice rules applicable to the waste paper industry.

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We operate an up-to-date Rosin Size plant in Erie, Pa., to serve the Eastern area. Another in Waterbury, Conn., to serve New England. Another in Kalamazoo, Mich., to serve the Middle West. And 3 in the South—located at DeQuincy, La., Valdosta, Ga., and Pensacola, Fla. . . . These 6 plants, operating as separate units and serviced by our own tank lines, insure quick, immediate shipment of every order, without "red tape" or delay. At the same time, Quality is guaranteed by our system of rigid factory supervision, which applies to all American Cyanamid products.

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Section of the
Technical Association of the Pulp and Paper Industry
Edited by Ronald G. Macdonald, Secretary

Pulp and Paper Mill Pollutional Studies

By L. F. Warrick[1] and J. M. Holderby[2]

Abstract

A general report on studies of pulp and paper mill wastes made during 1933 by the Bureau of Sanitary Engineering, Wisconsin State Board of Health, in cooperation with the Wisconsin pulp and paper industry.

The program to secure effective waste utilization and reduction of stream pollution inaugurated on a cooperative basis by the Wisconsin pulp and paper industry, the State Board of Health, and the State Committee on Water Pollution, has been carried forward during 1933. The following is a general report covering comprehensive waste studies made by the Bureau of Sanitary Engineering in collaboration with mill officials and with the assistance of the Advisory Committee on Waste Disposal for the Wisconsin pulp and paper industry.

Similar studies were made in 1926, 1929, 1931, and 1932. Results of the 1926, 1929 and 1932 studies have been published (*1*) (*2*) (*3*). The 1931 results have been reported to the mills concerned, and the 1933 studies are reported below.

1933 Studies

With two notable exceptions the 1933 studies were carried out following essentially the same plan as previously reported (*3*). Composite samples and flow data were collected over a period of one week's mill operation, usually from four to six days, instead of over one day or more limited periods as formerly, and determination of the biochemical oxygen demand of the wastes was omitted. The oxygen demand test was omitted because it is not applicable to preserved weekly composites and because previously obtained data for various types of mill wastes would permit a reasonably accurate estimate of pollution loadings. Samples were collected over the longer periods in order to more completely cover all phases of operating conditions within the mills and it is believed that the data obtained can, as a result, be used with more confidence than could the earlier data.

Field Procedure

Prior to starting the field work, arrangements were made with the State Laboratory of Hygiene to furnish sample containers and to make complete analyses of all samples collected.

Conferences were held with officials at each mill at which time results of previous studies were considered and details of mill operation were discussed. Such detailed studies of mill layouts as necessary were then made, sewers were located and plans laid for the measurement of waste flows and the collection of composite samples by the mill staff.

Weirs were used in most of the sewers for flow estimations. Flows in sewers inaccessible or unsuitable for weir installations were determined either by means of a current meter or a pitot tube or were estimated by the mill staff.

Samples were taken and weir readings were made at intervals of from fifteen minutes to four hours, according to the nature of the waste.

Analytical Procedure

The composite samples, preserved with chloroform, were shipped to the State Laboratory, where determinations were made for total and suspended solids, both fixed and volatile; pH and oxygen consumed. Suspended solids were obtained by filtering a large amount of the sample through a weighed filter paper in a Büchner funnel, total solids by evaporation, pH by colorimetric methods, and oxygen consumed by the procedure given in Standard Methods of Water Analysis (1933 edition) published by the American Public Health Association.

Fixed suspended solids may ordinarily be interpreted as representing clay and other filler material, inorganic dirt, etc. Volatile suspended solids are largely fiber and soluble solids consist of size, alum, lignin and other soluble materials, together with those substances originally present in the carrying water.

Results

Detailed data for each mill were given in individual reports furnished mill officials along with a table showing such data as will permit a direct comparison between mills in the various classifications together with a financial loss index for each mill. This index, which represents the value of the fiber lost through the sewers, is directly dependent upon the volume of production and does not, therefore, indicate relative waste recovery efficiencies.

The monetary values of fiber lost to the sewers were assumed for the purpose of comparison to be the same as were used in previous reports. These values are given in Table I.

Received March 22, 1934.
[1] Member TAPPI, State Sanitary Engineer, State Board of Health, Madison, Wis.
[2] Asst. Sanitary Engineer, State Board of Health, Madison, Wis.

TABLE I.
Value of Material Salvaged from Whitewater

Classification of Mill	Value of Lost Fiber Per Ton
Book wrapping, tissue and sulphite bond papers	$40.00
News and unclassified	25.00
Rag content bonds	60.00
Straw and paper board	20.00
Sulphite and kraft pulp	40.00
Ground wood pulp	15.00

It is realized that the above values may not apply strictly for the individual mills. To arrive at a true index each mill involved would need to revise its reported index to fit its own costs.

Precision of Data

In general, the cooperation received from the industry in carrying out these studies was very gratifying and it is believed that most mill officials appreciate the value of data of the type collected. In some cases, however, adequate facilities for flow measurements were not provided and the cooperative attitude was not so apparent. Thus, while most of the results are believed to be fairly reliable, being based upon observations and samples made and collected in a conscientious manner; and while the averages of the larger groups are believed to represent actual conditions rather faithfully; caution should be exercised in drawing definite conclusions from any one set of results.

Discussion of Results

Tabulations of results furnished mill officials presented data for every mill included in the studies from which analytical and flow data were collected and permits a comparison of each such mill with others within the group. Certain data from previous studies were given also to indicate the progress made by individual mills. The averages shown in the tabulation, however, were not regarded as the best indicators of the progress of the group as a whole because data were not available from every mill for every year and because survey procedures at some mills varied considerably from year to year. The trend, however, has been toward improved methods and more accurate results.

Perhaps the best indication of the general trend in waste reduction is to be had from a summary of several years' results for identical mills from which reasonably accurate and strictly comparable data are available. Such a summary is presented in Table II.

Considering individual classifications in Table II it is noted that while the average waste flow per ton for the paper mills included increased some 500 gallons between 1932 and 1933, the average fiber loss decreased 0.6 per cent, indicating that less rich whitewater is being wasted

FIG. 2.
The lime sludge produced by Wisconsin sulphate pulp mills is lagooned, as shown above, and used in nearby farms for agricultural purposes, or is recovered for use by the mill in causticizing operations.

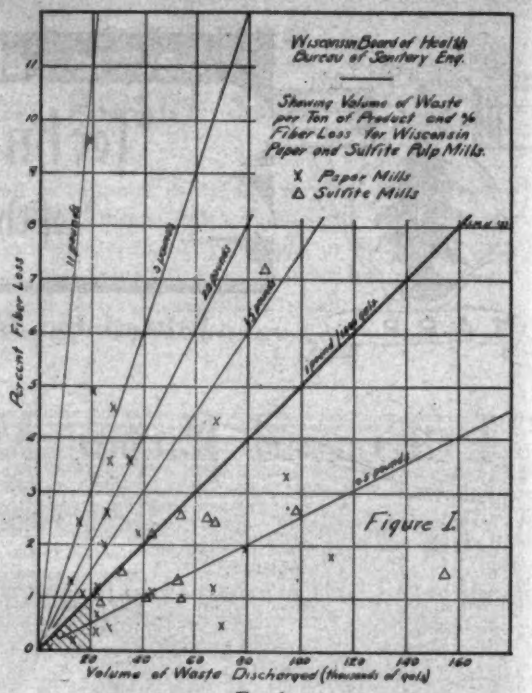
Wisconsin Board of Health
Bureau of Sanitary Eng.
Showing Volume of Waste per Ton of Product and % Fiber Loss for Wisconsin Paper and Sulfite Pulp Mills.
X Paper Mills
Δ Sulfite Mills
Percent Fiber Loss
Volume of Waste Discharged (thousands of gals)
Figure I.

FIG. 1.

than previously. The financial loss index in 1933 was, of course, less than in former years inasmuch as this index is directly proportional to the per cent fiber loss.

In the sulphite pulp classification, values are shown to have decreased materially each year; the reduction between 1931 and 1932 being the largest. It is of considerable interest to note that while the unit flow figures for sulphite are much larger than for paper, the per cent loss is somewhat lower, and this in spite of the fact that a number of sulphite mills in the group take care of a great deal of whitewater of paper mill origin. Suspended solids in wood room wastes are usually dirt, bark and large slivers. Where possible, therefore, such wastes have been separated from other mill wastes and in general are not included in the data here presented.

Results in the ground wood pulp group show no consistent trend because of the undue influence individual results have on the average for such a small group.

Over the three-year period the mills in the miscellaneous group have averaged 1.1 per cent reduction in fiber

FIG. 3
Adequate facilities for measuring and sampling of wastes discharging through mill sewers are essential for proper control over whitewater systems.

loss and have remained at about the same average unit waste volume.

Taken as a whole, the data from the 38 mills included in Table II indicate that there has been a general progressive decrease of significant magnitude in waste flows and fiber losses throughout the industry. These decreases, having been effected over a period during which the outlook for most of the mills was anything but bright, indicate a real interest in whitewater utilization and an appreciation of the economy to be realized therefrom.

In Fig. 1 (appended to this report) are plotted the 1933 per cent loss and waste flow data for the 26 paper mills and 12 sulphite mills included in these studies. To indicate the average fiber content of the wastes from the mills plotted, straight radial lines are indicated on the chart. When located according to their per cent loss and unit waste volumes, mills above any given radial line have greater and mills below have less average fiber consistencies in their sewers than the value represented by the radial line.

It has been held that losses from paper mills in general should not exceed 1 per cent, nor should waste flows exceed 20,000 gallons per ton of product. According to such a standard all paper mills should fall within the shaded area at the lower left-hand corner of Fig. 1. It will be seen that only three paper mills actually fall within this area, but that seven paper mills produce less than 20,000 gallons of waste per ton of product, and that seven such mills have losses of less than 1 per cent.

A study of the sulphite mill data indicates that the main problem for the sulphite industry in this connection is to reduce waste flows, inasmuch as only one mill is shown to have more than one pound of fiber per 1,000 gallons in its waste.

Sulphite waste liquor utilization activities were carried forward during the year, steps having been taken to manufacture and develop a market for a tanning compound produced as a by-product of the Howard Process. As the basic process for recovery or utilization in the mills of the sulphur, lime and fuel obtainable from sulphite waste liquor is fairly well established, and as it appears that a reduction of 85 per cent in the pollutional value of the waste, based on oxygen demand, can be effected by the process, careful consideration of individual sulphite mill problems of waste recovery and stream improvement is now being urged in order that these problems may be solved at an early date.

The provision of adequate facilities for measuring and sampling waste flows is a most important preliminary to any campaign for reducing and controlling sewer losses. At a number of mills these studies were seriously handicapped by lack of such facilities.

In conclusion it may be stated that while definite and encouraging progress is being made by the Wisconsin pulp and paper industry in reducing sewer losses and thereby decreasing stream pollution from fibrous wastes, the great differences between the maximum and the minimum losses found in these studies indicate that there is still need for improvement at a number of mills.

TABLE II.

Pulp and Paper Mill Waste Studies
Comparison of Results—1931-1932 and 1933.
From Identical Mills.

*Paper Mills	Waste Flow M. Gals. Per Ton of Product			Fiber Lost to Sewer Per Cent of Production			Financial Loss Index Dollars Per Average Day		
	1931	1932	1933	1931	1932	1933	1931	1932	1933
1	116.7	100.2	93.9	6.3	2.6	3.3	47.80	19.84	24.80
2	21.1	29.9	5.6	3.5	6.0	0.3	133.60	229.93	11.59
3	102.4	102.0	112.6	2.7	2.7	1.8	31.60	35.84	23.76
4	11.7	18.8	27.8	2.8	4.1	3.6	106.40	154.72	133.67
5	27.5	20.8	28.1	3.5	2.6	4.6	92.80	67.38	120.16
6	59.1	13.4	66.7	1.4	0.8	1.2	15.80	9.06	14.08
7	82.9	69.8	22.9	5.3	9.5	1.1	69.60	125.80	17.22
8	48.4	55.5	26.8	5.2	5.7	0.4	99.00	67.15	8.17
9	13.3	8.7	12.9	0.6	0.45	0.22	22.80	17.62	8.51
10	53.4	85.1	70.4	4.3	2.2	0.5	29.20	14.79	3.33
11	17.9	19.5	22.2	2.6	2.2	1.2	129.20	108.97	58.29
12	10.9	8.8	12.8	2.3	0.9	1.3	68.80	30.00	44.54
13	64.7	60.5	67.5	6.7	5.9	4.3	48.40	44.61	32.34
14	39.2	35.9	3.1	3.0	2.1	0.02	12.00	8.46	0.08
15	33.2	4.3	15.5	2.1	0.3	2.4	88.40	14.14	98.18
16	18.5	17.4	22.2	2.9	0.5	0.7	22.85	3.57	5.59
17	19.6	8.5	20.4	3.9	1.3	4.9	109.60	32.36	122.64
18	25.9	30.0	18.3	10.5	5.1	9.6	34.00	16.41	31.12
19	35.7	22.7	35.2	4.2	1.5	3.6	53.60	18.88	45.69
Ave.	42.2	35.7	36.2	3.9	3.0	2.4	63.97	53.66	42.30
**SULPHITE PULP									
1	80.0	57.3	54.3	16.1	4.3	2.6	376.80	106.55	60.65
2	64.3	23.2	55.8	9.9	2.4	1.0	96.40	26.89	10.85
3	71.5	70.4	67.3	2.5	6.5	2.4	68.80	175.23	64.80
4	35.9	36.0	42.2	1.8	1.4	2.2	57.20	44.87	72.25
5	49.1	48.0	52.6	11.2	1.1	1.3	384.00	38.87	44.29
6	117.8	59.2	65.1	17.8	2.3	2.5	642.40	82.08	88.38
7	46.9	25.4	41.6	12.3	1.7	1.0	160.00	22.40	12.73
8	36.9	13.4	23.1	3.2	1.8	0.9	97.60	51.12	25.63
9	120.6	87.5	30.9	5.5	2.2	1.5	98.80	38.79	26.73
10	225.6	161.0	98.3	25.4	3.9	2.7	243.20	37.68	25.82
Ave.	84.9	58.1	53.1	10.6	2.8	1.8	222.52	62.45	43.21
**GROUNDWOOD PULP									
1	7.1	23.4	8.6	1.7	8.1	1.7	4.85	25.12	4.79
2	35.1	3.5	42.4	1.3	0.6	3.1	6.00	2.72	14.81
3	27.0	22.8	1.5	1.5	2.5	0.22	8.25	13.36	1.19
Ave.	23.1	16.6	17.5	1.5	3.7	1.7	6.37	13.73	6.93
*MISCELLANEOUS									
1	27.9	27.8	35.0	5.1	4.1	4.3	126.00	100.56	107.01
2	38.2	33.7	28.4	4.7	2.5	2.8	132.20	70.50	78.82
3	67.4	66.4	98.3	5.6	2.7	5.0	167.60	81.75	150.45
4	134.4	142.5	126.5	10.5	9.1	8.1	309.00	258.00	229.85
5	25.6	22.5	21.9	2.5	2.6	3.4	75.25	79.50	104.36
6	19.8	15.5	13.3	3.9	4.1	1.9	39.00	30.97	14.40
Ave.	52.2	51.4	52.9	5.4	4.2	4.3	139.84	103.71	114.15
Grand Ave.	53.5	43.5	42.0	5.7	3.2	2.5	113.13	60.70	51.09

* Based on paper production; ** based on pulp production.

Literature Cited

(1) Stream Pollution in Wisconsin, Special Report, Wisconsin State Board of Health (1927).
(2) L. F. Warrick and K. M. Watson, Paper Trade J., Vol. 90, No. 24: 64-66 (June 12, 1930).
(3) J. M. Holderby, Paper Trade J., Vol. 96, No. 14:17-19 (April 6, 1933).

Bagley & Sewall Joins TAPPI

Bagley and Sewall Company, of Watertown, N. Y., one of the largest manufacturers of paper mill machinery, has become a member of the Technical Association of the Pulp and Paper Industry.

This company has been established for more than a century and has been building complete paper machines for about fifty years. Much of the present plant was built after the company had been building paper machines for a number of years, so that it was especially designed and equipped for this product.

Paper machines designed and equipped by this company have been shipped to England, France, Scandinavia, Finland, Russia, China, Japan and South America. These include the largest and fastest ever built for practically every kind of paper.

The largest machine yet built is a 304-inch news machine which is now running at about 1,200 feet per minute in the mill of the Great Lakes Paper Company, Fort William, Ontario. The largest book machine, 202 inches, was built for the Grays Harbor Pulp and Paper Company, Hoquiam, Wash. The largest kraft machine, 251 inches, was built for the National Paper Products Company, Port Townsend, Wash. The list of machines built includes many specialty machines and machines of exceptional refinements.

In connection with the building of complete machines, the company has developed and built many special patented features, such as the adjustable lip slice, improved steam joint, automatic reel, automatic roll handling winder, fully enclosed spiral level gear drive, compensating differential drive for top press rolls, special types of cylinder part, etc.

The officers of the company are: C. W. Valentine, president; E. S. Lansing, vice-prsident; A. M. Perkins, vice-president; C. L. Thompson, treasurer; H. C. Kinne, secretary. The Bagley and Sewall Company will be represented in the Technical Association by Mr. Valentine.

Pulp Specifications Committee Progress Report*

By Helen U. Kiely[1] and H. C. Schwalbe[2]

During the fall meeting of the Technical Association of the Pulp and Paper Industry held in Holyoke in Sept. 1932 a symposium on pulp evaluation and pulp specifications was held which aroused much interest. A sub-committee was formed which prepared a questionnaire dealing with the scope of the desired specifications. The results of this survey were then discussed during the annual meeting of TAPPI in New York in 1933 and it was concluded that a considerable number of mills already applied some sort of specifications in their own control work and also in purchasing pulp. It was agreed that it would be very desirable to collect these existing specifications and to study which qualities the different mills would specify and how well they would agree in their classification of different types of pulp. It was decided to send out samples of four different pulps, and it can be stated that the 24 mills which were asked to evaluate these pulps responded to a.. admirable degree. Nearly all the mills contributed very interesting material and a large number of new methods were reported. This should be particularly acknowledged, as the development of such tests costs much time and expenditure.

If one surveys the reported tests, the considerable progress in the evaluation of pulp is evident. In former years only bursting tests of one or very few points of the beating curve were reported. In the tests submitted to this investigation, we find determinations of the different strength factors, such as burst, tear and fold, as well as observations of color and dirt, absorbency, shrinkage curl, opacity, alpha cellulose, viscosity and copper number. Most interesting is the interpretation of the tests by the different laboratories, which indicates that nearly all investigators, in spite of widely different testing conditions, classify and specify each pulp correctly. For the tests, one very soft, weak pulp, suitable as a filler pulp in book papers, was selected; the next pulp was of very well balanced character, suitable for bond paper; the third pulp was a typical glassine pulp; and the last was a general utility pulp ranging in between a book, or a bond pulp.

Pulp A

The following laboratories were asked to identify a pulp sample of low burst, high tear and high freeness. Their reports follow:

Kimberly-Clark	—Softening pulp—bulky and pliable papers—filler pulp
Paper Institute	—Book pulp for bulk and softness—bond mixed with rags
Everett	—Book pulp—not a pulp for strength
Marathon	—Do not use this type
Fraser	—Blotting, tissue, absorbent papers where softness is essential
Weyerhaeuser	—Low strength pulp—good color and fair purity
American Writing	—Book, papeterie and absorbent types of paper—good color and clean.
Hammermill	—Low strength—good for book or sulphite specialties.
Champion	—Bulking, high absorbency—use in bulking or blotting papers.
Oxford	—Absorbent, high grade book and printing papers.
Riegel	—Book, asborbent papers—low strength papers.
S. D. Warren	—Book grades—low shrinkage.
Madison	—Slow beating—for good grade sulphites or sulphite-rag mixtures.
Lee	—Book pulp.
Fox River	—Book or low grade bond pulp.
Scott	—Soft, weak, quick hydrating—suitable for specialties.
Mead	—Low strength for high quality book.
Eastern	—Soft pulp—suitable for book papers.
Brown	—Typical book pulp—low grade bond or offset.
Hamilton	—Suitable for cheaper grades of papeteries or weddings.
Hawthorne	—Suitable for book paper.
Tofte	—Suitable for printing and soft papers.
Norway Institute	—Typical pulp for mechanical wood free printing papers.

Pulp B

The reports on the identity of a pulp sample of medium burst, medium tear and high freeness follows:

Kimberly-Clark	—Good bond pulp—high pop and folding.
Paper Institute	—High grade bond and sulphite writings.
Everett	—High grade bond and rag mixtures.
Marathon	—Slow hydrating—not usable for our papers.
Fraser	—Bonds and ledgers.
Weyerhaeuser	—Grades where color rather than strength important.
American Writing	—Bond, ledger and index bristol pulp.
Hammermill	—High grade sulphites and with rag mixtures.
Champion	—Bonds and tablets.
Oxford	—Toweling and coating raw stock—with refining. Excellent for bonds.
Riegel	—Utility pulp requiring much refining.
S. D. Warren	—Slow developing pulp.
Madison	—Best grades of sulphite and sulphite-rag papers.
Lee	—Good grade bond pulp.
Fox River	—Bond grade pulp.
Scott	—Good bond pulp.
Mead	—Best bond pulp.
Eastern	—Bond grade pulp.
Brown	—Well balanced bond pulp.
Hamilton	—Better grades wedding and papeterie.
Hawthorne	—Bond pulp.
Tofte	—Utility pulp for quality.
Norway Institute	—Writing papers and thin printings.

Pulp C

The reports or the identity of a pulp sample of high burst, low tear and low freeness follows:

Kimberly-Clark	—Good book or glassine pulp—poor folder.
Paper Institute	—Quick hydrating—dirty and poor color.
Everett	—Glassine, greaseproof, parchment.
Marathon	—Outstanding for our use—quick hydration.
Fraser	—Can stock, tabulating cards—high strength.
Weyerhaeuser	—Glassine—a strong, easy beating pulp.
American Writing	—Glassine—hydrating quickly.
Hammermill	—Good strength—easy hydrating.
Champion	—Not for bulking or absorbent papers—for high test.
Oxford	—High strength papers—wrapping, bond, manifold, etc.
Riegel	—Glassine.
S. D. Warren	—Bond paper or papers of high hardness and rattle.
Madison	—Sulphite writings and bonds.
Lee	—High strength with poor color and cleanliness.
Fox River	—Glassine stock.
Scott	—Greaseproof.
Mead	—Book pulp—high burst and fair strength.
Eastern	—In a class by itself—high Mullen, low tear.
Brown	—Short working range for strong papers.
Hamilton	—Cover papers with low color.
Hawthorne	—Board papers.
Tofte	—Between bond and greaseproof.
Norway Institute	—Bond papers.

Pulp D

The reports on the identity of a pulp sample of medium burst, medium tear and medium freeness follows:

Kimberly-Clark	—Medium grade general utility pulp—fair bond, cover. Use to reduce cost of furnish.
Paper Institute	—Cheaper and more common types of publication book.
Everett	—Fair bond pulp.
Marathon	—Moderately hydrating.
Fraser	—Used with other pulps for writings and books.
Weyerhaeuser	—Book furnishes.
Amperican Writing	—Medium grade—price pulp.
Hammermill	—Books and second grade sulphite bonds.
Champion	—Bonds and tablets—similar to Pulp "B".
Oxford	—Similar to Pulp "B" for bonds but not as good.
Riegel	—Hydrates readily—fair Mullen—low tear.
S. D. Warren	—Omionskin or glassine—easy beating.
Madison	—Sulphite writings or ledgers—medium tests.
Lee	—Medium grade bonds, papeteries or books.
Fox River	—Cheap book or glassine stock—hydrates well.
Scott	—Quickly hydrating, medium strong—suitable for books.
Mead	—Good book pulp.
Eastern	—Similar to Pulp "B"—bond papers.
Brown	—Similar to Pulp "C" but better refined.
Hamilton	—Clean, soft pulp.
Hawthorne	—Cheap writings.
Tofte	—Bonds where purity is not important.
Norway Institute	—Similar to Pulp "C" but not as high quality.

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* Presented at the annual meeting of the Technical Association of the Pulp and Paper Industry, New York, N. Y. Feb. 19-22, 1934.

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TABLE I—BEATER VALUES = $\frac{\text{Mullen Ratio} - \frac{1}{2}\text{ Tear Ratio}}{2}$

	Pulp A		Pulp B							Pulp C		Pulp D					
Freeness *	830	700	830	790	720	630	500	350	Avg.	820	680	800	680	530	400	250	Avg.
Kimberly	49.9	65.2	63.2	67.8	71.2	75.4	...	70.8	69.8	68.9	76.0	51.9	60.0	62.4	64.7	60.7	60.0
Appleton	32.3	51.8	57.8	55.0	59.1	59.9	57.6	...	57.5	69.1	75.9	43.8	54.6	47.7	40.7	...	48.8
Everett	...	85.3	...	...	...	...	96.0	102.0	99.1	...	96.7	...	86.3	...	86.8	...	86.5
Marathon	...	60.8	...	...	63.8	68.0	...	...	65.9	...	74.1	...	...	...	...	...	...
Fraser	58.2	53.8	59.0	53.5	60.1	61.8	61.5	50.8	58.0	74.5	81.7	52.0	53.9	59.0	52.7	...	53.5
Weyerhaeuser	57.7	67.9	72.5	80.2	81.4	81.2	79.2	...	79.9	74.0	84.6	68.2	76.1	75.3	71.9	...	73.0
Dill & C	68.0	72.1	72.2	75.8	79.2	78.3	...	...	76.5	76.8	80.4	68.4	71.5	73.0	71.8	...	71.3
American	70.0	74.9	83.3	77.7	77.8	78.8	88.5	...	81.5	81.5	85.1	76.7	77.4	77.2	75.2	67.8	74.9
Hammermill	...	60.4	...	...	67.8	69.8	...	...	68.8	...	79.8	61.6	63.6	62.3	...	...	62.5
Champion	56.2	67.5	70.4	70.3	75.1	78.2	76.3	75.0	74.2	82.3	91.3	73.0	75.0	81.5	84.0	84.5	79.6
Oxford	41.0	65.3	71.9	72.0	...	73.6	...	...	72.5	78.9	74.5	58.5	64.6	71.3	...	...	64.8
Lee	...	60.9	...	72.1	81.3	85.1	88.5	...	81.8	...	90.8	...	65.8	71.8	74.4	...	70.6
Fox	56.3	53.5	59.9	59.0	58.0	58.0	...	...	58.7	68.2	72.4	52.0	53.0	52.5	53.0	...	52.7
Scott	52.4	...	78.1	65.5	...	...	...	...	71.8	88.3	82.4	66.7	60.5	...	...	...	...

* Approximately.

As previous investigations had proved that tests of different laboratories are hardly comparable in their actual test figures, the committee was quite skeptical as to what results would be reported on these four pulps. And the tests as reported by the cooperating mills are again, as expected, not comparable. At a later date the complete report will be published which will show that the actual figures, even after a recalculation to the same mathematical units, vary 100 per cent and sometimes more. A direct use of these data for pulp specifications of an eventuality international nature appears to be problematical.

Need for Haste

In addition to data on strength characteristics, a pulp specification must contain information about many other important properties, such as color, cleanliness, absorbency, chemical constants, and the behavior of pulps during its use in regard to curl or opacity, etc., of the finished paper.

If we wait until all these necessary tests are completely standardized, we will probably have to delay proper specifications for many years, but we just cannot afford to do this, as we already have too much confusion and difficulties in the pulp trade and in the use of pulps due to the lack of specifications. We are forced at present to apply general, insufficiently defined trade names to get products which very often, entirely without fault of both parties, are not the desired material.

A thorough study of the 24 reports on the 4 pulps sent out by the committee confirmed this opinion. Nearly all of the 24 co-operating laboratories can be considered as the best equipped and most experienced researchers in pulp evaluation on this continent, and their results represent the best that is available today. As mentioned before, their actual test data are not at all comparable. The application of condensed evaluations as the "beater value," or the "Bergman factors" did not improve the situation. Still, in their verbal and written interpretation of their test results, nearly all mills describe the pulp character of the few pulps correctly. This proves that the mills can specify a pulp sufficiently if they compare it with other pulps which they had investigated previously with their own mill methods.

Mill Results Comparable on Percentage Basis

The logical conclusion was to give up the attempt to compare the test results of different mills directly. Instead of this, an attempt was made to compare only the tests of the 4 pulps for each laboratory on a percentage basis. And just as the written discussions of each mill agreed very well, the same was the case when the tests were calculated in a per cent relation to each other. It was assumed that no pulp would be more than 20 per cent weaker than the weakest one of the 4 pulps, and none would be stronger than 20 per cent above the values for the strongest of the four. These figures were calculated and called zero, as low and 100, as high.

Then, for example:

Pulp A received a rating of	15	per cent for burst (Mullen)
	54	per cent for tear
	3.5	per cent for fold
Pulp B received a rating of	39	per cent for burst
	52	per cent for tear
	28	per cent for fold
Pulp C received a rating of	74	per cent for burst
	35	per cent for tear
	80	per cent for fold
Pulp D received a rating of	45	per cent for burst
	29	per cent for tear
	18	per cent for fold

	Abbe Ball Mill											Valley Beater												
	Dill & Collins	American	Hammermill	Champion	Oxford	Riegel	Warren	Madison	Tofte	Hawthorne	Brown	Kimberly	Appleton	Everett	Marathon	Fraser	Weyerhaeuser	Lee	Fox (15 lb. Beater)	American (7 lb. Beater)	Eastern (6 lb. Beater)	Norway (Lampen)	Scott (Jordan)	Mead (Jordan)
Pulp A																								
Mullen Ratio..	18.7	15.9	13.6	10.5	9.8	9.4	14.5	10.6	22.6	18.8	19.9	16.8	9.1	12.2	10.0	10.0	20.0	14.1	12.25	21.3	8.2	10.2	7.0	11.8
Tear Ratio.....	68.5	66.5	66.5	63.0	40.0	68.3	54.5	64.5	63.5	...	64.8	55.4	42.7	42.5	61.0	68.1	...	61.6	35.0	49.3	60.0	65.1	54.0	48.1
Fold Ratio....	4.0	4.6	1.1	1.0	0.5*	...	3.7*	0.8	2.7*	1.9	...	1.82	0.83	13.2	4.9	0.5*	3.4	6.8	...	7.3	...	.38	...	...
Freeness Ratio.	59.6	59.4	..	...	...	...	...	...	62.5	...	...	54.0	...	...	...	...	...	...	...	56.5	...	15.5	...	48.0
Pulp B																								
Mullen Ratio..	48.75	40.0	46.05	39.5	34.8	41.75	39.4	35.4	48.8	59.8	45.3	54.0	37.7	35.2	34.8	30.0	47.5	44.0	44.0	37.7	40.0	34.2	20.6	29.5
Tear Ratio.....	37.1	56.0	45.6	30.2	65.3	53.0	61.3	62.9	49.7	...	53.8	56.0	68.0	59.5	37.6	38.2	...	53.5	38.7	37.7	43.45	30.4	72.6	64.0
Fold Ratio....	45.75	26.0	41.6	34.9	6.5*	...	8.7*	9.3	12.1*	43.6	...	30.0	35.8	38.6	46.1	9.1*	13.75	29.2	...	51.0	...	19.1	...	...
Freeness Ratio.	65.4	69.8	...	...	...	...	...	...	76.0	...	...	60.0	...	...	...	...	...	...	...	58.5	...	73.1	...	61.0
Pulp C																								
Mullen Ratio..	70.0	72.6	74.5	76.5	76.8	77.2	73.8	76.0	68.9	71.5	70.0	72.6	77.0	75.5	76.8	76.6	59.7	74.0	75.1	68.0	77.8	76.5	78.5	75.5
Tear Ratio.....	27.6	34.8	45.0	38.0	43.3	37.6	68.0	41.1	43.4	...	48.8	25.0	26.0	54.5	49.0	22.6	...	32.6	38.1	52.2	35.8	39.9	16.0	41.4
Fold Ratio....	80.8	80.5	82.6	82.6	83.2*	...	82.4*	82.8	81.6*	82.0	...	82.2	82.5	78.6	80.0	83.0*	81.5	79.8	...	78.5	...	83.1	...	...
Freeness Ratio.	38.0	39.2	...	...	...	...	...	...	32.4	...	...	34.8	...	...	...	...	...	...	...	37.4	...	56.9	...	33.8
Pulp D																								
Mullen Ratio..	46.4	50.5	45.3	50.5	37.3	39.8	57.6	59.5	50.2	64.6	49.8	50.8	22.7	25.1	24.1	16.0	30.4	27.4	30.6	39.5	30.7	44.5	19.9	38.8
Tear Ratio.....	22.3	24.0	25.4	32.5	27.1	22.5	22.8	28.1	29.6	...	27.7	29.6	23.0	36.3	33.4	45.4	...	36.0	27.0	36.3	36.0	27.3	58.5	28.9
Fold Ratio....	17.5	25.5	25.6	33.8	10.2*	...	69.6*	16.3	27.6*	29.8	...	9.9	8.7	7.1	24.1	5.1*	3.0	5.4	...	11.9	...	39.8	...	...
Freeness Ratio.	26.6	29.6	...	...	...	...	...	...	11.0	...	...	38.8	...	...	...	...	...	...	...	26.4	...	69.9	...	36.4

Percentage evaluation of the averaged data—Assuming a value 20 per cent below the weakest pulp to be equal to zero
Assuming a value 20 per cent above the strongest pulp to be equal to 100.

* M.I.T. Tester.

The results of the completed percentage calculation for each mill showed a very satisfactory result. Most mills now agreed very well and these data can really be used for a specification. This percentage system can easily be extended to the other pulp properties. For example: color is at present measured by many arbitrary units, but this does not matter. Each mill can report a percentage figure for the poorest, or whitest pulp, still using for the actual determination, the units they are applying at present.

All that is necessary to get this percentage system working is to agree on two standard pulps for which the percentage figures will have to be set by a central organization. Then each mill has to secure these pulps and test them out in their own testing method. These tests will give the fixed points on the scale and all other tests will be expressed in per cent. The details of selecting these pulps and distributing them will have to be agreed on. At present, it is thought to take similar pulps to the Pulps "A" and "C" of this investigation, but of a purified Alpha pulp type to be certain that their characteristics will not change to any measurable degree for a few years. If a change should occur, new pulp samples should be secured and retested by some appointed neutral laboratories, and the percentage values of these pulps should be set. In other words, similar to the adoption of the yard or the meter; a definition has to be given to the pulp yard-stick.

The percentage system has the great advantage of being independent of any testing procedure. Standard procedures can be adopted and improved without affecting the specifications built on the percentage system. This system is further independent of test expressions which might be in the English or metric system. The different languages of the countries dealing with pulp will not affect it. The layman, as well as the technician, can understand and apply the percentage system, and instead of a multitude of test expressions—as ratios, or double folds, or grams, or centipoises—only one term, "per cent," will have to be used.

It is suggested that the method be tried out also on other tests, such as alpha cellulose, or viscosity, or copper number, or opacity, where at present different testing procedures are applied and where comparisons are often difficult. Further, as in the case of alpha cellulose, the usual figures of better pulps cover data from 87 up to 93 per cent. Into the small space of 6 per cent, entirely different pulps are compressed. With percentage systems these figures would be spaced more apart, indicating the wide difference in character.

The Sub-Committee on Pulp Specifications of TAPPI, therefore, thought it appropriate to suggest to the other Associations that a discussion of this proposal be made so as to get as soon as possible an improvement of the present entirely unsatisfactory condition.

General Classification of Various Bleached Sulphite Pulps

(By the Schwalbe Percentage System)

The percentages are comparable with those listed in the main tabulation of the twenty-four contributing laboratories. These figures represent averages of at least twelve tests on each pulp.

GROUP I—Pulps suitable for soft, absorbent, low strength papers, such as papeterie, book, tissue, etc.

Pulp	Mullen Per cent	Tear Per cent	Freeness Per cent	Fold Per cent
A	15.8	67.2	59.4	4.4
5	18.7	73.7	63.9	15.0
22	20.1	89.8	57.0	19.3
7	22.5	63.2	35.0	19.0
3	17.9	14.0	20.8	14.0
4	18.6	20.0	11.7	16.0

GROUP II—Pulps suitable for high and moderate strength papers, such as bond, ledger, bristol, safety check, etc.

Pulp	Mullen Per cent	Tear Per cent	Freeness Per cent	Fold Per cent
B	39.7	56.0	69.7	35.6
24	40.5	138.0	65.9	78.5
9	33.8	91.4	68.3	49.0
21	35.9	75.9	71.7	54.0
23	52.3	57.2	42.4	73.0
D	50.0	23.7	20.4	35.0
17	55.0	20.6	23.9	39.0
15	47.1	25.6	43.7	30.0
14	42.9	44.2	23.3	33.0
10	34.1	13.8	11.3	25.0

GROUP III—Pulps suitable for extremely strong, hard papers, such as glassine, greaseproof, wrapping, etc.

Pulp	Mullen Per cent	Tear Per cent	Freeness Per cent	Fold Per cent
C	73.2	34.2	39.9	80.0
19	74.8	43.3	57.9	118.0

SUGGESTED GENERAL SPECIFICATION OF BLEACHED SULPHITE PULPS

(Schwalbe Percentage System)

Mullen	Tear	Freeness	Fold	Color	Cleanliness
(a) High (50% or above)	(1) High (50% or above)	(d) High (50% or above)	(4) High (50% or above)	(x) High (60% or above)	(7) Good
(b) Moderate (20% to 50%)	(2) Moderate (20% to 50%)	(e) Moderate (20% to 50%)	(5) Moderate (20% to 50%)	(y) Moderate (30% to 60%)	(8) Moderate
(c) Low (20% or below)	(3) Low (20% or below)	(f) Low (20% or below)	(6) Low (20% or below)	(z) Low (30% or below)	(9) Low

A pulp could be specified in any combination of the above—for example—a2e4x7

System for Arriving at Percentage Figures

MULLEN-RATIO

Add up all Mullen data, take the average and you will get for

Pulp A	39.33	Pulp C	55.33
Pulp B	45.70	Pulp D	49.00

Now it is assumed that we will have no weaker pulps than a figure 20 per cent below the one of Pulp A and no stronger than 20 per cent above the value for Pulp C. This is purely an assumption because one might say just as well, take 25 per cent below or above. But I feel 20 per cent would cover the majority of cases and I want as much spread between the percentage data for each pulp as possible. Now

20 per cent from 39.33 is	31.46
20 per cent above 55.33 is	66.40

We will call 31.46 our zero; 66.40 our hundred figure on a per cent scale. Then the difference between 66.40 to 31.46 or 34.94 has to be divided into 100.

$$\frac{100}{34.94} = 2.86$$

or one unit above 31.46 or below 66.40 will correspond to 2.86 per cent.

Now Pulp B has 45.7 Mullen average, which is 45.7 minus 31.46=14.24 units or 14.24 multiplied by 2.86 will give *40.8 per cent*

or Pulp A—Mullen-Ratio or Mullen Direct average = 39.33 − 31.46

7.87 × 2.86 = 22. per cent

Pulp C— 55.33 − 31.46

23.87 × 2.86 = 68.4 per cent

Pulp D— 49.00 − 31.46

17.54 × 2.86 = 50.2 per cent

The same procedure applies for any other test.

TEAR RATIO

Average Tear for A is 75, B is 69.33, C is 66.70, and D is 61.70.

Take 20 per cent below the lowest figure, which is in this case 61.70 for Pulp D.

61.70 minus 20 per cent
−12.20
48.8 gives our zero figure

Pulp A has the maximum with 75 (add 20 per cent or 15)
+15
90 gives our hundred figure

90 minus 48.8 = 41.2 units or

$\frac{41.2}{100}$ = 2.42 or 1 unit equals 2.42 per cent

Now Pulp A..... 75.0
−48.8
26.2 × 2.42 = 63.5 per cent

Pulp B..... 69.33
−48.80
20.53 × 2.42 = 49.7 per cent

Pulp C..... 66.70
−48.80
17.90 × 2.42 = 43.4 per cent

Pulp D..... 61.70
−48.80
12.20 × 2.42 = 29.6 per cent

The same applies for fold or freeness or color, etc.

Considerations In Color Standardization*

By M. Rea Paul†

Abstract

Standardization work done by the American Society for Testing Materials and the Optical Society of America is mentioned.

A brief description of the Dictionary of Color is given.

Consideration of the physical and psychological concepts of color and means for their measurement, particularly with reference to paper, is commented on.

Standardization activities in other industries have progressed to a considerable extent. Color measurement and specification as a basis for grading products has been advanced to cover raw cotton, tomatoes, evaporated milk, potato chips, hay, citrus fruits, and many other materials. A specification for railroad signal glasses in terms of spectral transmission was adopted as far back as 1908. The textile and dyestuffs industries have made commendable progress in their work on color standardization. The paint industry, through Subcommittee XVIII, Committee D-1 of the American Society for Testing Materials, set up, in 1930, a Method of Analysis for the Color Characteristics of Paints in Terms of Fundamental Physical Units.*(1)* What has been accomplished in other industries might well be worthy of note by those who are interested in the standardization of color with respect to the raw materials and finished product in the pulp and paper industry.

There apparently exists today, a considerable amount of misunderstanding with regard to color, due largely to a somewhat loose use of color terms and a passive acceptance of things as they appear to exist under visual examination. Before the question of standardization can be given intelligent consideration by any industry, it is first necessary to make some attempt to accurately define the various terms that the industry in question is going to be called upon to employ with regard to color.

Work of Optical Society of America

Terminology, of course, differs to a considerable extent in different industries, depending upon the particular type of product under discussion. In the creation, therefore, of definitions, one should not be too greatly influenced by the terminology adopted by other industries. Instead, first concentrate on the selection of definitions that are as scientifically accurate as possible. The most outstanding work to which we can refer today is that contained in the 1920-21 Colorimetry Report of the Optical Society of America.*(2)* At the present time, the report is being rewritten in a manner to considerably increase its usefulness, and this will be issued in the near future. This report, after accurately defining color, goes on to describe the manner in which the nature of any color can be completely specified psychologically in terms of three fundamental attributes, called *hue, saturation* and *brilliance.* Believing these, and certain others, terms were not generally acceptable, the Optical Society created, in 1924, a Terminology Committee to approach the question of nomenclature from the points of view of art, science and industry. This committee sent out to the three groups just mentioned, several hundred questionnaires, and tabulated the returns*(3)* in an attempt to determine which would prove most generally acceptable for artistic, scientific and commercial usage. Sufficient disagreement prevailed in the tabulated replies to preclude the possibility of developing a fixed nomenclature that would prove generally acceptable. I cite this in order to emphasize the uselessness of seeking definitions of a type that will be acceptable to groups outside of your own pulp and paper industry.

A Dictionary of Color

Instead of searching for so-called "popular" definitions, I would prefer to recommend acceptance of a precise terminology of the kind contained in the report referred to above. Once established, consideration can then be given the creation of a more popular nomenclature that would lend itself to ready translation into the terminology that the pulp and paper industry would employ in their daily commercial operations. The simplest form in this connection would be the use of color names with which to identify samples of color to be specified. Where colors are to be identified by name, there probably is no better reference available today than the Maerz and Paul "Dictionary of Color." Just as the English Dictionary records words and their meanings, according to accepted usage, this color dictionary in the same way provides a record of color names and the particular color sensations they identify, as established by consensus of opinion. The dictionary presents over 7,000 samples, ranging from colors approaching white to colors approaching black, through every gradation of hue, saturation and brightness. In addition, all of the names, of which there are some 3,400, that have appeared in print, are listed against the particular colors they identify. The work of obtaining, comparing and matching these named colors extended over a period of six years. The manner of arriving at consensus of opinion among users of the color name was comparatively simple. In the case, for example, of cream, some 4,000 so-named "cream" samples were obtained. These were placed on large laboratory tables, and those

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colors which were dissimilar to the main group were discarded, until a central group of some 200 were secured that showed reasonable agreement. The central or average color in this group was determined upon as representative of the sample known as cream, and that color was matched against one of the dictionary plates and the name "cream" recorded as identifying it. Thus, the "Dictionary of Color" provides a ready reference for those who might wish to identify colors through the use of names.

The next step in any standardization work is to specify very carefully, the illumination and conditions for viewing samples that are under consideration. Furthermore, development of adequate definitions will be extremely helpful in avoiding troubles that are often encountered through misunderstandings. One of the best examples of confusion of terms is encountered where whiteness and brightness of a material are being discussed. A pigment for instance, like titanium oxide, which I am informed is used quite generally throughout the pulp and paper industry, possesses, in addition to great opacity, that valuable combination of extreme whiteness and extreme brightness. While both characteristics are measurable instrumentally, confusion ofttimes results through failure to differentiate between the two. Perhaps, for your purpose, blueness, and not whiteness, may be the feature that you are desirous of specifying. Therefore, I would urge acceptance of adequate, understandable definitions prior to attempting the development of measurement and specification.

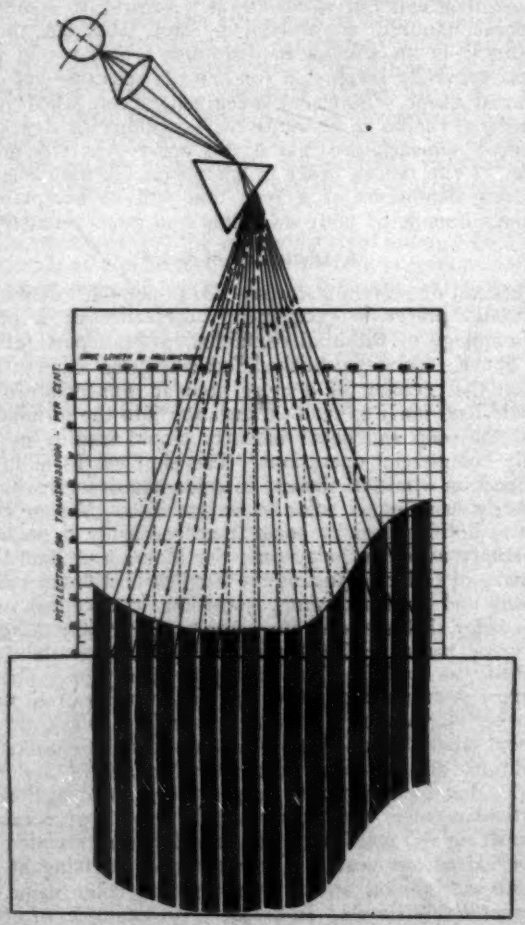

FIG. 1.
Diagram showing spectral reflection of a magenta sample.

Psychological vs. Physical Concepts

For the individual who would seek to gain a better understanding of color, it would be well to remember that color is not a material thing, but is a sensation arising from the activity of the eye in response to light. It is needless at this time to discuss the various theories with regard to the propagation of light, but instead let us simply observe that visible radiant energy, or light as it is commonly called, travels in rays from its source to the eye of the observer. These rays are the physical stimuli that, coming in contact with certain sense organisms, provide the sensation which we identify as color.

Considerable misunderstanding often exists, due largely to a failure to distinguish clearly between psychological or sensation conceptions, and physical conceptions which relate only to the stimulus. The significance of these two phrases of color—stimulus color and sensation color—can be best appreciated by calling attention to the fact that the impression of color can be produced in the mind, even in darkness, by pressure on the eyeball. The pressure exerted is, as in the case of light, the stimulus, and the color impression which results is the sensation. To study stimulus color, one makes use of the spectroscope in some form. It is commonly known that white light, when passed through a prism, is dispersed or broken up into its various constituent parts or wavelengths, and these, when viewed in normal sequence, are known as the visible spectrum. At one end are the shorter wavelengths known as violet, and at the other end are the longer wavelengths, known as red. When light falls upon an opaque object, that object absorbs or reflects the light, depending upon its nature. If the surface is "gray" of high reflectance, it will absorb only a small amount of the light which it receives, reflecting equally, the various wavelengths in such abundance as to create in the mind, the sensation of light gray. If, however, the surface is "dark gray" in color, most of the wavelengths will be absorbed and only a limited amount of each will be reflected, and the observer will recognize the object as dark gray. So-called "red" objects appear so to the eye, because of their ability to selectively absorb the complementary green wavelengths, reflecting back to the eye, the longer wavelengths in such intensity as to stimulate the red-sensitive nerves, thus creating the sensation of red in the mind of the observer.

Spectrophotometic Measurements

Every colored object can be examined spectrophotometrically, and the relative intensity of each of the stimulus constituents measured with comparative ease. This is illustrated in Fig. 1, which shows a light source, collecting lens and prism, the latter dispersing the component parts of the light in spectral order on the face of a magenta colored sample. At the left will be found the short violet rays, and at the right, the longer red rays. These are selectively absorbed or reflected, as illustrated by the vertical stripes. The distance to which these black stripes rise above the zero line on the chart is indicative of the per cent reflection at the different wavelengths. The balance of each stripe shows the per cent absorbed by the sample. Determination of per cent reflection at each wavelength, and indication of these points on a chart similar to that shown, provide a spectral reflection curve as illustrated. This curve is a graphic stimulus specification of the color sample, but not a specification of the sensation as evoked in the eye when the sample in question is observed visually.

Unfortunately, there is no general rule by which we may decide, from direct comparison of two spectral transmission curves, whether they represent colors that are

alike or dissimilar. Therefore, it is necessary to compute from stimulus data, instrumentally obtained, to sensation data that specifies the color in psychological terms. Present methods for computing stimulus color in terms of sensation are involved, and somewhat of a mystery to the uninitiated.

Light Transmission by Paper

Spectral reflection data of the type just mentioned is, however, not particularly new, but was recorded as the basis of a fundamental specification, and referred to as such, in Chapter 7 of Rood's "Modern Chromatics" published in 1879. The Colorimetry Section of the Bureau of Standards has, since 1913, been working on the determination of spectral reflection and transmission of objects and materials, and has published many papers on the subject. Very fortunately, there appears to be a gratifying agreement among the world's leading experts on colorimetry, that spectral distribution data does provide the basis for a fundamental color specification. Some time ago, the paint industry advocated a method based upon fundamental data of this type, for retaining a check on their standards of color. While paint is an opaque material, it should be remembered that most paper with which your industry has to deal, possesses a characteristic in addition to reflection and absorption—namely, transmission.

If an attempt should be made, on the average paper, to measure its transmission spectrophotometrically, the paper in almost every instance would be too heavy to permit such reading to be made in the customary manner. If a spectral reflection determination is obtained on a single thickness of paper, a true reading would not result, because such measurement would not take into consideration the light which different papers would transmit. If a paper is folded in two or more thicknesses, the question of interfacial or multiple reflection is then introduced, the hue is accentuated, and a false reading results. This is illustrated in Fig. 2, with its accompanying explanation. If a sample of paper is backed by a block of magnesium carbonate, a curve is produced, showing high brightness. If backed by unilluminated space, the resulting curve will be representative of a color much darker than the paper itself. Correcting for the magnesium carbonate backing, and computing the results in sensation terms of the black backed and white backed papers, and averaging the two, an entirely different curve results than in the case where infinite thicknesses of paper of the same type are placed together and read.

It is my understanding that a committee has been appointed to investigate ways and means for measuring and specifying the colors of pulp and paper. I have, in consequence, introduced the readings just mentioned, as illustrative of one reason for urging the committee to avoid too eager acceptance of their findings. In addition, let me emphasize the necessity for adequately defining the handling of the material to be examined, as well as the method or instrument with which the determinations will be obtained.

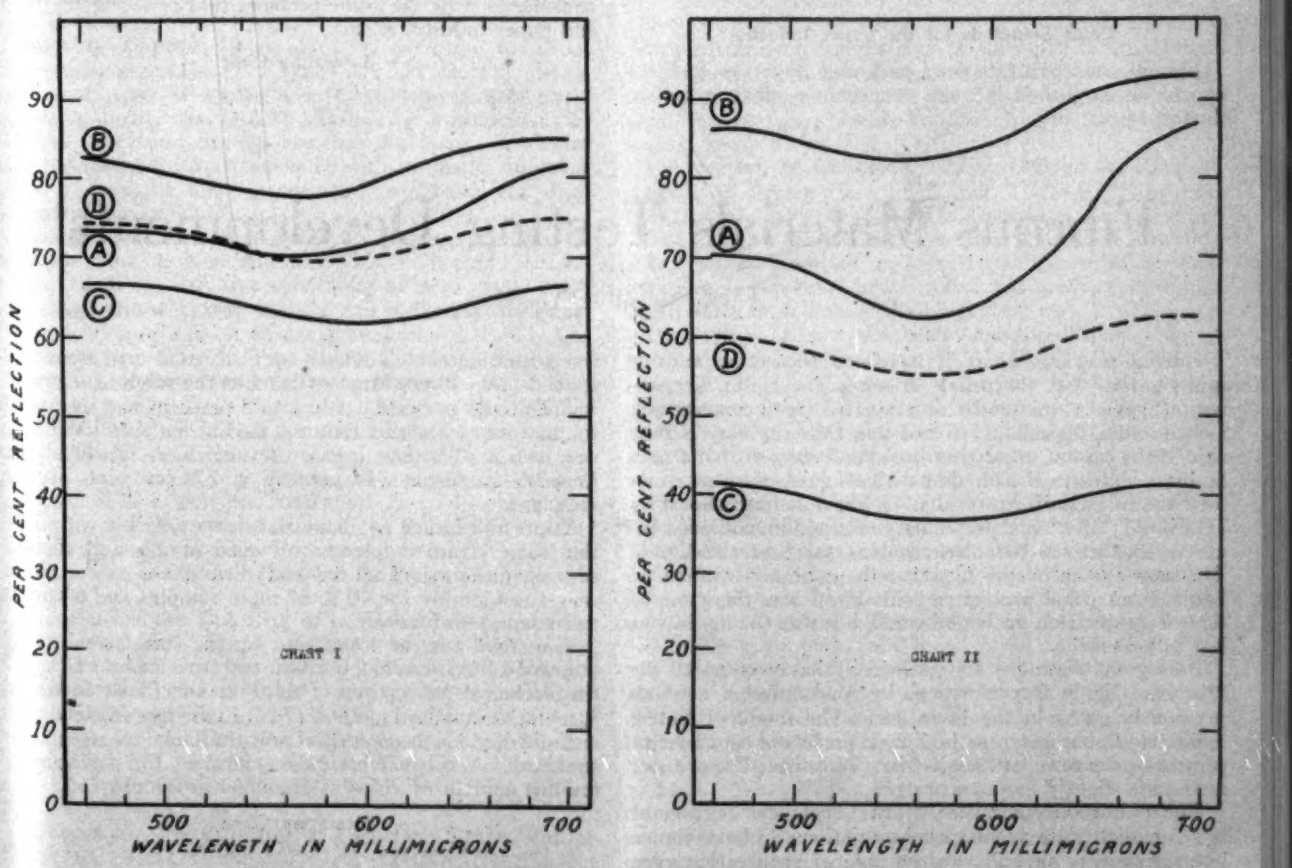

FIG. 2. SPECTRAL REFLECTION OF WHITE PAPER

Chart I represents reflection readings on a heavy white mat paper, while Char t II shows readings on a thin white paper. In both charts, A is reading made on a sufficient number of sheets of the same paper pressed closely together to obtain ultimate capacity. B is a single sheet backed with a block of magnesium carbonate. C is a single sheet backed with the black or unilluminated space. D is the computed mean of the white backed and black backed papers after conversion to sensation equivalents.

Frequent Color Questions

When the subject of measurement and specification arises with respect to color, there are invariably questions asked, of which I would like to anticipate a few and provide their answers in the following statements:

The colorimeter, or some similar type of apparatus, cannot take the place of the man in the plant in correcting the color of pulp and paper.

The photoelectric type spectrophotometer would prove an economy over the manual type spectrophotometer only if a large number of samples are to be read at regular intervals. For instance, creation by the pulp and paper industry of a central control laboratory to deal with all of the colors the various groups would wish to submit for measurement, would provide sufficient volume.

Secondary standards can be used successfully if checked at regular intervals on apparatus that provides readings in unchanging terms of fundamental physical units.

The colors of raw materials entering into the making of paper, and the finished product are measurable today instrumentally.

The cost of installing a spectrophotometer, or other types of color measuring device, consists of the salary of one good laboratory man, plus the incidental cost of the apparatus. The cost of the apparatus is purposely termed "incidental" because the important phase of color work which is most often overlooked, and which should be emphatically stressed, is the man who must operate the instrument and intelligently interpret the results obtained through its use.

Color Standards for the Paper Industry

Finally, standardization of pulp and paper as to color can be accomplished through cooperative effort in the industry, by:

1. Agreeing upon definitions that are scientifically correct, and yet lend themselves to ready interpretation for commercial use.
2. Development of secondary standards that are easily reproducible.
3. Specification of standard conditions for viewing sample and standard.
4. Specification of a method by which secondary standards can be checked that would take into consideration notation of hue, saturation, brightness, translucency, degree of luster, and character of the illumination under which the standard or sample is observed and measured.

Before concluding my remarks, I am going to say a word or two about the Color Council, as your Chairman has requested. Briefly, the Inter-Society Color Council, composed of national societies and associations, was formed three years ago for the purpose of bringing together those interested in color, and for the purpose of disseminating reliable information with regard to this subject. The Technical Association of the Pulp and Paper Industry have, during the past year, been a member of the Council, represented by three official delegates—Messrs. R. G. Macdonald and E. O. Reed, and Miss Helen U. Kiely.

While the Council is not designed to undertake research in connection with color, it does attempt to bring together the individual or group having a color problem, with the individual or group that has a solution for it. Possibly, your committee, working through the Inter-Society Color Council, may obtain assistance that will be of value in the consideration of the color problem that is facing the pulp and paper industry today.

Literature Cited

(1) A.S.T.M. Standards, Part II, p. 731, D 307-30.
(2) J.O.S.A., VI, No. 6:527 (Aug., 1922).
(3) J.O.S.A., XIII, No. 1:43 (July, 1926).

Fibrous Materials Testing Developments*

By Merrill A. Youtz[1]

During previous years it has been shown by various investigators that the usual processes for lignin determination gave a material contaminated with extractives. Cohen and Dadswell (*1*) found that this was very noticeable in the case of eucalyptus wood and showed that a preliminary extraction with dilute alkali gave more satisfactory and more uniform results. It has now been shown by Harris (*2*) that this preliminary extraction not only removes extractives but also removes some of the lignin. This was shown by the fact that the methoxyl content of lignin from wood pretreated with alkali was the same as that of lignin from untreated wood, but that the lignin was less in amount.

Billington, Simmons and Baird (*3*) have compared the results of lignin determinations by four different methods previously given in the literature. The modified Forest Products Laboratory method was preferred for routine control purposes, although the Wilstätter-Zechmeister method is slightly more accurate.

The pulpwood committee of the Technical Section of the Canadian Pulp and Paper Association (*4*) have shown by experiments on mill yard storage of spruce that even when considerable amounts of the wood had been rot stained (6 to 30 per cent) or reached the stage of incipient rot (23 to 29 per cent) only 1 to 2 per cent had advanced rot in four years and that the decline in pulp yield was very small. Thirteen species of fungi were identified but *Lenzites saepiaria* was present in 57 per cent of the samples.

Youtz and Lauer (*5*) have shown the necessity of adopting some standard fineness of wood sample and method of preparation, since all the analytical values except lignin vary considerably for 40 to 60 mesh samples and 60 to 80 mesh samples of balsam.

A method for the 1 per cent caustic soda solubility of pulpwood has been adopted as a tentative standard (*6*) of the Technical Association of the Pulp and Paper Industry. A tentative standard method (*7*) for moisture in wood chip and sawdust has been revised and continued as a tentative standard. A method has been published for determining the dirt content of chips as a control procedure (*8*).

Literature Cited

(2) Ind. Eng. Chem. Anal. Ed. 5: 105-6 (1933).
(3) Paper Trade J. 96, No. 4, 30-3 (1933).
(4) Pulp and Paper Mag. Can. 34: 113-116; 191, 210 (1933).
(5) Paper Trade J. 96: No. 3, 36-7 (1933).
(6) Ibid 97: No. 3, 38 (1933).
(7) TAPPI Manual of Standards (T 3m).
(8) Paper Trade J. 97: No. 1, 40 (1933).

* Presented at the annual meeting of the Technical Association of the Pulp and Paper Industry, New York, N. Y., Feb. 19 to 22, 1934.

[1] Chairman, TAPPI Fibrous Materials Testing Committee, Northern Paper Mills, Green Bay, Wis.

Pulp and Paper Industry Literature Review

Abstracts of Articles and Patents Compiled by the Abstracts and Bibliography Committee of the Technical Association of the Pulp and Paper Industry, A. Papineau-Couture, John F. Ohlson, C. E. Peterson and Clarence J. West, Chairman

Copies of United States Patents can be obtained from the United States Patent Office, Washington, D. C., for 10 cents each. Send currency, not stamps.

Dyeing

Factors Governing Absorption of Dyestuffs By Paper Fibers. Frederic A. Soderberg. Paper Trade J. 97, No. 21: 39-45 (Nov. 23, 1933).—An investigation into the effect upon dyestuff absorption of possible defects in accepted methods of color application and of various essential and extraneous materials present during the processing of paper stock showed that certain changes requiring negligible expenditures could augment color retention and enhance the appearance of the finished product.—A. P.-C.

Dyeing Cellulose Materials with Reference to the Structure of Cellulose. R. E. Rose. Ind. Eng. Chem. 25: 1265-1268 (Nov. 1933).—A description of the essentials of the dyeing processes, bringing out why the different behavior of different dyes constitutes a real contribution to our knowledge of the constitution of cellulosic materials. —A. P.-C.

Coloring Paper. Franz Dotzel, assignor to I. G. Farbenindustrie A.G. U. S. pat. 1,925,526 (Sept. 5, 1933). —Pulp or paper is treated with a synthetic tanning agent before or during dyeing with substantive or basic dyer or the like. Uniform dyeings are thus obtained. Condensation production of formaldehyde with aromatic sulphonic acids are suitable tanning agents. Cardboard, etc., may be treated similarly.—A. P.-C.

Fixing Dyes on Paper. Carl Z. Draves, assignor to E. I. Du Pont de Nemours and Co. U. S. pat. 1,926,614 (Sept. 12, 1933).—A dye containing an acid group, such as metanil yellow, is used and the dye is fixed on the paper by application of a di- or tri-arylguanidine.—A. P.-C.

Process for One or Two-Sided Coloring, Sizing or Drenching of Paper on the Paper Machine. I. G. Farbenindustrie Akt. Ges., Frankfurt a.M. Ger. pat. 546,270 (June 30, 1927).—It has been found that paper can be colored, sized or drenched on one or both sides on the paper machine in a very satisfactory manner, if the web of paper with a moisture content of 25 to 40 per cent is led over a roll in a special manner, the roll itself revolving in a trough with the desired color, size or drenching liquid. This process is especially adapted to the coloring of thin papers.—J. F. O.

Process for the Coloring of a Web of Paper on the Paper Machine. I. G. Farbenindustrie Akt. Ges., Frankfurt a.M. Ger. pat. 580,903 (March 20, 1927).—A trough for the color is placed under the wire just before the couch roll.—J. F. O.

Process for the Coloring of Paper or Other Similar Materials. I. G. Farbenindustrie Akt. Ges., Frankfurt a.M. Ger. pat. 580,904 (March 6, 1928).—Addition to Ger. pat. 580,903.—J. F. O.

Process for the Coloring of Paper or Other Similar Materials. I. G. Farbenindustrie Akt. Ges., Frankfurt a.M. Ger. pat. 581,032 (March 30, 1928).—Addition to Ger. pat. 580,903.—J. F. O.

Process for the One or Two Sided Coloring, Sizing, or Drenching of Paper on the Paper Machine. I. G. Farbenindustrie Akt. Ges., Frankfurt a.M. Ger. pat. 580,813 (Aug. 9, 1927).—Addition to Ger. pat. 546,270.—J. F. O.

Pulp Purification

Purification of Pulp. Francesco C. Palazzo and Fortunato Palazzo. Brit. pat. 388,656 (March 2, 1933).—Pulp containing 96 to 99 per cent alpha-cellulose is obtained from raw pulp by treating with a liquor containing 1 to 1.5 per cent caustic soda and 0.5 to 0.75 per cent sodium sulphite under 0.5 to 2 atmospheres for 1 to 3 hrs. The pulp at 5 to 6 per cent consistency may be bleached with a slightly alkaline sodium hypochlorite solution containing 1 to 2 per cent available chlorine or with a slightly acid potassium permanganate solution or with both successively. Any remaining impurities are removed with dilute sulphurous acid, *e.g.*, of 0.5 to 1 per cent concentration, or with dilute hychloric acid, and through washing.—A. P.-C.

Process for the Purification of Pulp. Deutsche Gold und Silber Scheideanstalt, vormals Rosseler, Frankfurt, a.M. Nor. pat. 52,417 (Sept. 24, 1930).—Before the chief chlorine treatment, the material is subjected to an alkaline pre-treatment at high temperatures with the exclusion of atmospheric oxygen, so that the between treatment with alkali between the chlorine and the oxygen bleaching can be done away with.—J. F. O.

Purification of Cellulose Fiber. George A. Richter, assignor to Brown Co. U. S. pat. 1,924,623 (Aug. 29, 1933).—Sulphite or kraft pulp is digested at a temperature of not less than about 175° C. in water furnished with only a low concentration of hydroxyl ions to neutralize such acidity as is generated in the water and produce a product which has a high alpha-cellulose content.—A. P.-C.

Production of Low-Viscosity Cellulose Fiber. George A. Richter, assignor to Brown Co. U. S. pat. 1,923,641 (Aug. 22, 1933).—Cotton or wood pulp is treated with a permanganate solution, colored reaction products are removed, and the fiber is digested in an alkaline solution such at a 1 to 3 per cent of caustic soda to obtain a product which has a high alpha-cellulose content.—A. P.C.

Purification of Unbleached Wood Pulp. Kazumoto Nakamura. Cellulose Ind. (Tokyo) 9: 149-515 (1933).— The unbleached pulp, chlorinated with chlorine water of various concentrations for 1 hour, washed and pressed to 70 per cent water content, and treated with caustic soda solutions of various concentrations in the proportion of 4.1 to 200 g. of pulp, was boiled in an autoclave at 125° and 2.5 atmospheres for 4 hours. Purification with 1.5 per cent of chlorine, based on the amount of pulp, and increasing amounts of caustic soda results in an increase in the alpha-cellulose content and a decrease in copper number; the yield of pulp decreases with an increasing addition of soda. With 20 per cent soda and 1.5 to 5.0 per cent chlorine (on the pulp), the alpha-cellulose content slightly decreases and the copper number increases with increasing concentration of chlorine water; viscosity is lowered also with increasing amount of chlorine. Alpha-cellulose content is but little affected by chlorination with less than 1.5 per cent chlorine.—A. P.-C.

Coating and Filling Materials

Clay-Casein Slips for Paper Coating. Cause and Prevention of Foaming. E. O. Whittier, S. P. Gould and S. A. Hall. Ind. Eng. Chem. 25: 1213-1216 (Nov. 1922).—Foaming tendency may be caused by some unknown characteristic of the milk from which the casein was prepared, by use of too rigid agitation during precipitation of the casein, by use of a temperature below 95° F. during precipitation, or by insufficient washing of the curd; long time of contact with the precipitating acid is a contributing factor at low temperatures. Mixing of even a small proportion of a non-foaming casein with a casein of high foaming tendency prevents foaming. Surface-tension depressants are effective in preventing foaming if added during the preparation of the slip and in sufficient amounts. Intensity of foaming of slips is but slightly affected by variation in the degree of alkalinity. It is suggested that the foaming tendency of casein is dependent on the degree of aggregation of the casein molecules.—A. P.-C.

Filled Surface Paper. Donald D. Bradner, assignor to The Champion Coated Paper Co. U. S. pat. 1,913,329 (June 6, 1933).—An uncoated paper suitable for use as a book paper contains mineral matter such as calcium carbonate and adhesive such as casein concentrated in the surface depressions (the amount of mineral matter being not greater than about 1 lb. per side per 1000 sq. ft. of surface).—A. P.-C.

Paper with an Alkaline Filler. Harold R. Rafton, assignor to Raffold Process Corp. U. S. pat. 1,920,942 (Aug 1, 1933).—In the manufacture of paper filled with an alkaline filler, the aqueous fibrous mix from which the paper is made is cooled at a point prior to that at which the web passes from the web-forming device, so as to lessen the activity of the alkaline filler.—A. P.-C.

Paper Manufacture. Harold R. Rafton, assignor to Raffold Process Corp. U. S. pat. 1,914,526 (June 20, 1933).—An alkaline filler is added after forming a web from a fibrous furnish.—A. P.-C.

Paper with an Alkaline Filler. Harold R. Rafton and Arthur M. Brooks, assignors to Raffold Process Corp. U. S. pat. 1,914,527 (June 20, 1933).—A paper is formed of fibrous material, rubber and alkaline filler such as one containing calcium carbonate and magnesium hydroxide.—A. P.-C.

Process for the Treatment of the Surface of Paper and Board. G. E. Blomberg, Sydney, Australia. Swed. pat. 77,102 (May 12, 1926).—The top surface consists of a thin layer of an emulsion of latex and clay.—J. F. O.

Sizing

Study of Some Factors Influencing the Strength and Stability of Experimental Papers Made From Two Different Sulphite Pulps. Royal H. Rascha, Merle B. Shaw and George W. Bicking. Bur. Standard J. Research 11: 7-23 (1933) (Research Paper No. 574).—The effects of beating and sizing on 43 bond papers were studied. Careful adjustment of the pH or rosin-sized papers greatly improved the accelerated aging tests. A pH of 5.0 appeared to be the correct value. Surface sizing increased the tensile and decreased the tearing strengths in proportion to the amount of size taken up. Glue sizing improved the stability. For optimum stability the alum in the tub-sizing bath should be kept at the minimum necessary to serve satisfactorily as a preservative of the glue.—A. P.-C.

Sizing Cellulosic Fibers. Clarence E. Libby, assignor to National Aluminate Corp. U. S. pat. 1,929,205 (Oct. 3, 1933).—Fibers for paper making are treated in suspension with a substance such as a rosin size and a water-soluble alkaline aluminate, and the size is precipitated on the fibers by an acid-reacting soluble such as aluminum sulphate.—A. P.-C.

Colloidal Control in Starch Sizing. B. W. Rowland. Paper Trade J. 97, No. 21: 37-38 (Nov. 23, 1933).—A procedure for adding starch to a fiber furnish and precipitating it with alum following the mechanical hydrating process is described.—A. P.-C.

Sizing for Paper. Edward J. Johnstone. U. S. pat. 1,929,115 (Oct. 3, 1933).—The melting point of rosin size is reduced by adding refined tall oil in a quantity not over 30 per cent that of the rosin used in making the size.—A. P.-C.

Sizes. Luis Neuman. Brit. pat. 393,774 (June 15, 1933).—Sizes and finishes for paper and textiles comprises pectin in admixture with known sizing and finishing agents, such as dextrin, starch, soaps, fatty oils, glycerine.—A. P.-C.

Sizing Paper Containing an Alkaline Filler. Harold R. Rafton, assignor to Raffold Process Corp. U. S. pat. 1,922,325 (Aug. 15, 1933).—For manufacturing sized paper filled with alkaline filler, substantially water-insoluble, precipitated sizing material, such as rosin size precipitated with alum, is included in a fibrous web containing alkaline filler, the sizing being added at a point subsequent to the point of delivery of the stock to the forming apparatus, and the sheet is subsequently dried.—A. P.-C.

Size. American Cyanamid and Chemical Corp. Fr. pat. 744,795 (April 26, 1933).—A dry size for paper is made by mixing caustic soda or potash, water and powdered rosin, while preventing any appreciable reaction and maintaining the mixture at ordinary temperature, the proportions of the ingredients being insufficient to produce a liquid product.—A. P.-C.

Size for Paper. N.V.W.A. Scholten's Chemische Fabrieken. Brit. pat. 380,674, (Sept. 22, 1932).—A swelling starch, soluble in the cold, is incorporated with paper during manufacture. Up to 5 per cent or more for special papers may be added.—A. P.-C.

Sizing Paper. Chemische und Seifenfabrik R. Baumheier A.-G. Brit. pat. 386,018 (Jan. 12, 1933): addition to 385,344.—A resinous preparation produced in accordance with the process described in 385,344 is used for sizing paper.—A. P.-C.

Sizing Paper. Papeteries Navarre. Belg. pat. 395,323 (April 29, 1933).—The pulp is sized with one or more substances, such as paraffin, which will remain fixed to the fibers in the course of manufacture, in either acid, neutral or alkaline medium.—A. P.-C.

Sizing Pulp. Walter H. Randall, assignor to Fidelity Trust Co. U. S. pat. 1,914,163 (June 13, 1933).—An aqueous pulp suspension is mixed with dry fibers and an unemulsified size.—A. P.-C.

Sized Pulp Stock. Walter H. Randall, assignor to Fidelity Trust Co. U. S. pat. 1,918,781 (July 18, 1933).—A sizing mixture for pulp comprises a fibrous medium such as chemical wood pulp having a substantial impregnation of unmodified size such as rosin or paraffin.—A. P.-C.

Sizing Paper Pulp. Paper Makers Chemical Corp. Brit. pat. 381,633 (Oct. 13, 1932).—Powdered size consisting of rosin saponified with an alkali is added to stock in the beater. In an example 100 lb. of commercial rosin is cooked with 40 lb. of water and 18 lb. of soda ash or with caustic soda or potash, ammonia, sodium silicate, potassium carbonate, etc. The product may be atomized in a current of hot air. Alum may be added as a fixative.—A. P.-C.

IMPORTS OF PAPER AND PAPER STOCK

NEW YORK, BOSTON, PHILADELPHIA AND OTHER PORTS

NEW YORK IMPORTS

WEEK ENDING MAY 5, 1934

CIGARETTE PAPER

H. H. Strauss, Collamer, Havre, 140 cs.; Standard Products Corp., Ile de France, Havre, 10 cs.; De Manduit Paper Corp., Washington, Havre, 142 cs.

WALL PAPER

F. J. Emmrrich, Washington, Hamburg, 2 bls.; ———, Washington, Havre, 9 cs.; S. K. Lonegren, Kungsholm, Gothenburg, 3 cs.

NEWS PRINT

Star Co., Markland, Liverpool, N. S., 778 rolls; N. Y. Tribune, by same, 1508 rolls; World Telegram, by same, 613 rolls; Jay Madden Corp., Washington, Hamburg, 137 rolls.

PRINTING PAPER

Winsor Newton, Inc.; American Banker, London, 3 cs.; E. Dietzgen & Co., Volendam, Rotterdam, 10 cs.; Steiner Paper Corp., by same, 1 cs.; International F'd'g Co., J. Jadot, Antwerp, 13 cs.

WRAPPING PAPER

Yardley & Co., American Banker, London, 5 cs.; Steiner Paper Corp., Volendam, Rotterdam, 59 bls.; Scharff Bros., Black Heron, Rotterdam, 5 cs.; ———, Washington, Hamburg, 14 cs.; Walker Goulard Plehn Co., by same, 1274 rolls, 277 bls.; Swift & Co., by same, 4 rolls; Wilkinson Grey & Co., Kungsholm, Gothenburg, 18 bls.

FILTER PAPER

H. Reeve Angel & Co., Inc., American Banker, London, 16 cs.; J. Manheimer, Majestic, Southampton, 91 bls., 7 cs.

DRAWING PAPER

H. Reeve Angel & Co., Inc., American Banker, London, 1 cs.

DRAWING BOARD

H. Reeve Angel & Co., Inc., American Banker, London, 3 cs.

SURFACE COATED PAPER

Gevaert Co. of America, Westernland, Antwerp, 18 cs.; ———, Washington, Hamburg, 39 cs.

DECALCOMANIA PAPER

B. F. Drakenfeld & Co., Britannic, Liverpool, 21 cs. (duplex); B. F. Drakenfeld & Co., by same, 1 cs. (simplex).

TISSUE PAPER

B. F. Drakenfeld & Co., Britannic, Liverpool, 1 cs.; W. J. Byrnes, Washington, Southampton, 2 cs.

BOWL PAPER

Hurley Johnson Corp., Britannic, Liverpool, 30 bls.

STENCIL PAPER

American Express Co., J. Jadot, Antwerp, 3 cs.

CARD BOARD

Flexideal Co., Washington, Hamburg, 15 cs.

MISCELLANEOUS PAPER

E. Dietzgen & Co., Chr. Sass, Marseilles, 12 cs.; Blauvelt Wiley Paper Manfg. Co., Black Heron, Rotterdam, 8 bls.; E. Fougera & Co., Ile de France, Havre, 20 cs.; C. Schleicher & Schull Co., Inc., Washington, Hamburg, 3 cs.; Corn Exchange Bank Trust Co., Hakonesan Maru, Kobe, 6 cs.; E. H. Sargent & Co., Kungsholm, Gothenburg, 2 cs.; Wilkinson Grey & Co., by same, 66 bls.; Blauvelt Wiley Paper Manfg Co., by same, 150 rolls, 50 bls; The Borregaard Co., Inc., by same, 703 rolls, 183 bls.

RAGS, BAGGINGS, ETC.

Walker Goulard Plehn Co., Collamer, Havre, 15 bls. new cuttings; Castel & Overton, Inc., by same; 39 bls. new cuttings; Continental Bank Trust Co., Chr. Sass, Marseilles, 44 bls. rags; Leigh Textile Co., Chr. Sass, Barcelona, 193 bls. cotton waste; Loumar Textile By-Products, Inc., by same, 73 bls. bagging; Banco Coml Italiane Trust Co., by same, 214 bls. rags; Bank of N. Y. Trust Co., by same, 137 bls. bagging; ———, by same, 112 bls. bagging; E. J. Keller Co., Inc., Black Heron, ———, 49 bls. rags; ———, Black Heron, Rotterdam, 205 bls. cotton waste; Bank of N. Y. Trust Co., Cameronia, Glasgow, 45 bls. bagging; E. J. Keller Co., Inc., Excambion, ———, 296 bls. rags; E. J. Keller Co., Inc., Byron, ———, 510 bls. jute waste; ———, Artigas, Liverpool, 67 bls. bagging; Darmstadt Scott & Courtney, Carso, Genoa, 49 bls. rags; Banco Coml. Italiane Trust Co., by same, 529 bls. bagging.

OLD ROPE

Banco Coml. Italiane Trust Co., Mauly, Venice, 95 coils; E. J. Keller Co., Inc., American Banker, ———, 107 coils.

CHINA CLAY

English China Clays Sales Corp., Britannic, Liverpool, 84 bags.

WOOD PULP

N. Y. Trust Co., Volendam, Rotterdam, 560 bls. wood pulp; Perkins Goodwin & Co., Kungsholm, Gothenburg, 2540 bls. kraft pulp; Pagel Horton & Co., Inc., by same, 12 bls. sulphite.

WOOD PULP RESIDUE WASTE

Colas Roads, Inc., Kungsholm, Gothenburg, 261 drums.

BOSTON IMPORTS

WEEK ENDING MAY 5, 1934

Parsons & Whittemore, Inc., Capulin, ———, 625 bls. wood pulp.

PHILADELPHIA IMPORTS

WEEK ENDING MAY 5, 1934

Gilman Paper Co., Markland, Liverpool, N. S., 1475 rolls news print; E. J. Keller Co., Inc., Collamer, ———, 108 bls. rags; Loumar Textile By-Products, Inc., Collamer, Havre, 220 bls. rags; Phila. National Bank, by same, 277 bls. rags; Castel & Overton, Inc., by same, 54 bls. rags; ———, Excambion, Alexandria, 96 bls. rags; Darmstadt Scott & Courtney, Artigas, Manchester, 74 bls. bagging; ———, by same, 62 bls. bagging; Bank of N. Y. Trust Co., Augsburg, Hamburg, 1120 bls. wood pulp; Castel & Overton, Inc., by same, 1954 bls. wood pulp.

BALTIMORE IMPORTS

WEEK ENDING MAY 5, 1934

Congoleum Nairn Co., Exchange, Marseilles, 36 bls. rags; Congoleum Nairn Co., Exchange, Naples, 160 bls. rags; Darmstadt Scott & Courtney, Artigas, Manchester, 75 bls. rags; Parsons & Whittemore. Inc., C. of Havre, ———, 1000 bls. wood pulp; Parsons & Whittemore, Inc., C. of Hamburg, ———, 125 bls. wood pulp; Parsons & Whittemore, C. of Norfolk, ———, 685 bls. wood pulp.

NORFOLK IMPORTS

WEEK ENDING MAY 5, 1934

E. Butterworth & Co., Inc., Artigas, Manchester, 52 bls. bagging; Dixie Jute Bagging Corp., by same, 56 bls. bagging; Irving Trust Co., by same, 74 bls. bagging.

Comparison of Natural Aging of Paper with Accelerated Aging by Heating

In an investigation of the permanence of papers conducted at the National Bureau of Standards, additional information has been obtained which indicates that heating paper at an elevated temperature provides a convenient means of accelerating the normal aging effects which take place in papers kept under favorable storage conditions.

A wide variety of writing papers and some book papers were retested after four years of normal aging for chemical purity and strength. Many of the papers had suffered marked change in strength, particularly in folding endurance. The papers were placed by normal aging in approximately the same order of stability foretold by the accelerated aging tests conducted four years previously. This for 72 hours on various physical and chemical properties, but particularly on the folding endurance since it is one of the properties most sensitive toward heat or normal aging. In general, the papers with the highest chemical purity were the most resistant to deterioration by heat or normal aging, while those with the least desirable initial properties underwent the more rapid deterioration.

Gilman Paper Co. Expands

[FROM OUR REGULAR CORRESPONDENT]

GILMAN, Vt., May 7, 1934.—Work is to start in about a week for the extension of the warehouse here of the Gilman Paper Company. The cost is $30,000. The contractor is the J. H. Taylor Construction Company, New York City.

Bleaching of Pulp

DAS BLEICHEN VON ZELLSTOFF. By Eberhardt Munds. Guntter-Staib Verlag, Biberach-Riss, 1934. 141 pages. 31 illustrations. Price $1.50.

This small book on the bleaching of wood pulp is written primarily for the technical man and does not claim to be highly scientific; therefore theoretical discussions and formulas are omitted.

The first section of 55 pages are devoted to the preparation and properties of bleaching agents, including chlorine, bleaching powder and sodium and calcium hypochlorites. In the preparation of the hypochlorites, details are given for the use of liquid chlorine or bleaching powder. The preparation of chlorine water from liquid chlorine is described, the decreasing solubility of chlorine in water as the temperature rises being stressed. Other bleaching agents mentioned are potassium permanganate, peroxides and the per salts.

The second part is devoted to equipment for bleaching plants and the problems arising in bleaching. The bleaching hollander is described and illustrated. The chemical reactions in the bleaching of pulp are discussed, so is bleaching with chlorine gas, chlorine water, calcium and sodium hypochlorites. Stepwise and high density bleaching are considered. The Wolf, Voith and Thorne bleachers are illustrated and compared. Washing methods, the quality of water to be used and the special handling of pulp during the bleaching process are treated in special sections. There is also a discussion of cellulose for rayon, the change in the strength properties of pulp during the bleaching operation and the testing of the bleached pulp.

Anyone with a reading knowledge of German will find the book worth while.

CLARENCE J. WEST.

Watertown Section Reports Improvement

WATERTOWN, N. Y., April 30, 1934.—Reports from several concerns in this section indicate business improvement which is expected to continue for the remainder of the year. It is claimed that factory sales have shown a substantial increase over a year ago and a normal resumption of business is expected in the near future. Business at the mill of Knowlton Brothers is better now than a year ago and the working force is also much larger. Wages are also higher and the general business situation is much brighter. It is also reported that the force at the Bagley & Sewall Company is more than double that of a year ago and the volume of business is improving steadily. Other paper mills in this section are understood to be experiencing similar conditions.

Capt. Eble Addresses Paper Salesmen

The regular weekly luncheon and meeting of the Eastern Division of the Salesmen's Association of the Paper Industry, held on Monday last in the Tavern Room of the Commodore Hotel, New York, attracted the largest attendance of the season, despite the warm weather.

Capt. F. X. A. Eble, formerly Commissioner of Customs, and now manager of the Match Institute, was the guest speaker. He gave an exceptionally interesting and instructive address on the "Possible Effect of the Reciprocity Tariff Bill now in Congress on the Paper Industry" and his remarks were deeply appreciated by all present.

Water in Connecticut Subsides

HOLYOKE, Mass., May 7, 1934.—The waters in the Connecticut river have subsided to less than four feet over the dam, relieving the mills on the lower level of loss of head for their waterwheels. Steady power seems to be assured until midsummer at least.

New York Market Review

Office of the PAPER TRADE JOURNAL,
Wednesday, May 9, 1934.

The position of the local paper market is practically unchanged. Demand for the various standard grades of paper continues moderately active. Supplies are moving into consumption in good volume for the time of year. Sales forces of the leading paper organizations are generally optimistic. Prices are steady.

Production of news print paper in the United States, Canada, and Newfoundland is being maintained in sufficient volume to take care of current requirements, although accumulations at the mills are not excessive. Advertising volume in the leading newspapers is running well ahead of the corresponding period of last year.

The fine paper market is displaying a fairly strong undertone. Demand for writing and cover papers is fairly persistent. Tissues are in normal request for the season. The coarse paper market is showing some signs of improvement. Paper board quotations are holding to schedule, in most instances.

Mechanical Pulp

Conditions in the ground wood pulp market are satisfactory. Manufacturing operations in North America and abroad are still keyed to consumption and stocks at the mills are light, with the result that the industry is in a sound statistical position. Prices are holding to formerly quoted levels.

Chemical Pulp

Steadiness prevails in the chemical pulp market. Demand for domestic and imported kraft pulp and easy bleaching sulphite continues fairly brisk for the time of year. Shipments of the various grades to the paper mills are going forward in good volume. Prices are holding to schedule.

O'd Rope and Bagging

The old rope market continues to mark time. Demand for both domestic and foreign old manila rope is rather restricted at present. Small mixed rope is moving slowly. Old rope prices remain unchanged. The bagging market is quiet. Scrap and gunny bagging are listless. Roofing bagging is dull.

Rags

Trading in the domestic rag market is irregular. Some interest is being displayed by the paper mills in new cotton rags. No. 1 white shirt cuttings are in excellent request. Roofing grades are firmer. Recently reported improvement in the imported rag market is well sustained.

Waste Paper

The paper stock market is moderately active. Board mill demand for the lower grades of waste paper is rather light. No radical price changes are reported. The higher grades of waste paper are fairly steady. Dealers are hoping for firmer prices after the supplementary code hearing, which takes place in Washington, D. C., next Monday.

Twine

Business in the local twine market is being maintained along routine lines. The industry is considered in a better position than at this time last year. Demand for the various grades of twine is fairly active for the season. Prices are steady, despite the usual keen competition.

TO DISCUSS REVISED CODE

(Continued from page 11)

c. In clean-ups, wash-ups, start-ups, changing wires or machine clothing and ordinary repairs and adjustments, in cases where such machinery is shut down for a period of not less than 8 consecutive hours.

Time so worked shall be excluded in computing hours worked under Subsections b and c of Section 1 and shall not be subject to the provisions of said Subsections relating to the payment for time worked at time and one-third.

3. No limitation contained in Section 1 hereof shall apply to employees of any class when engaged in emergency repairs or emergency maintenance work occasioned by breakdowns or involving protection of life or property. All time worked under this Section in excess of the limits prescribed in said Section 1 shall be paid for as not less than time and one-third.

4. No provisions of this Article shall be so construed as to require that the same working time shall be paid for as time and one-third more than once.

5. No employee shall be permitted to work for two or more members of the Industry an aggregate number of hours in excess of the limits prescribed in said schedule.

H. S. Colby Made Sales Manager

The appointment of H. S. Colby as general sales manager of Combustion Engineering Company has just been announced by R. M. Gates, vice president of that company.

Mr. Colby, until recently, was president of the Air Preheater Corporation. His technical education was acquired at Cooper Union and Columbia University and for the past twenty years he has been engaged in the design, production and sales of steam generating equipment involving boilers, stokers, pulverizers, economizers and air preheaters. This background of experience and an extensive acquaintance in the field of steam generation, eminently fit him for his new duties, which include direct charge of district office activities.

G. H. Mead Heads Industrial Advisory Board

[FROM OUR REGULAR CORRESPONDENT]

WASHINGTON, D. C., May 9, 1934—George H. Mead, president of the Mead Paper Corporation, Dayton, Ohio has been elected chairman of the Industrial Advisory Board of the NRA succeeding Henry S. Dennison whose term has expired. Members of this Board are automatically changed every three months.

Miscellaneous Markets

Office of the PAPER TRADE JOURNAL,
Wednesday, May 9, 1934.

BLANC FIXE.—The position of the blanc fixe market is practically unchanged. Prices are holding to schedule. The pulp is quoted at from $42.50 to $45 per ton, in bulk; while the powder is selling at from 3½ to 3¾ cents per pound, in barrels, at works.

BLEACHING POWDER.—Steadiness prevails in the bleaching powder market. The contract movement is well up to average. Prices are maintained at formerly quoted levels. Bleaching powder is selling at from $1.90 to $2.15 per 100 pounds, in drums, at works.

CASEIN.—The casein market continues firm. Domestic standard ground is quoted at 12 cents and finely ground at 13 cents per pound. Argentine standard ground is selling at 15½ cents and finely ground at 16 cents per pound, all in bags, car lot quantities.

CAUSTIC SODA.—The caustic soda market is moderately active. Contract shipments are moving with regularity. Solid caustic soda is quoted at from $2.60 to $3.10; while the flake and ground are selling at from $3 to $3.05 per 100 pounds, in large drums, at works.

CHINA CLAY.—Demand for china clay is fairly persistent. The contract movement is normal. Prices are steady. Imported china clay is quoted at from $13.50 to $21 per ton, ship side; while domestic paper making clay is selling at from $5 to $12 per ton, at works.

CHLORINE.—The chlorine market is displaying a strong undertone. Supplies are moving into consumption in good volume. Prices remain unchanged. Chlorine is quoted at from $2 to $2.25 per 100 pounds, in tanks, or multi-unit cars, in ton lots, or over, at works.

ROSIN.—The rosin market is slightly easier. Grades of gum rosin used in the paper mills are now quoted at from $5.90 to $6.10 per 280 pounds, in barrels, at works; while wood rosin is selling at $4.90 per 280 pounds, in barrels, at southern shipping points.

SALT CAKE.—Paper mill demand for salt cake is fairly active. Prices are holding to schedule. Salt cake is quoted at from $12 to $14; chrome salt cake at from $12 to $12.50 per ton, at works; and imported salt cake at from $12 to $12.50 per ton, on dock.

SODA ASH.—The soda ash market is practically marking time. Shipments against contract are going forward in a normal manner. Prices remain unchanged. Quotations on soda ash, in car lots, at works, are as follows: in bulk, $1.10; in bags, $1.40; and in barrels, $1.50.

STARCH.—Most of the business transacted in the starch market during the past week was routine. Prices are holding to schedule. Special paper making starch is quoted at $2.67 per 100 pounds, in bags; and at $2.95 per 100 pounds, in barrels, at works.

SULPHATE OF ALUMINA.—No radical changes were reported in the sulphate of alumina market. Prices remain unchanged. Commercial grades are quoted at from $1.35 to $1.50; while iron free is selling at from $1.90 to $2.05 per 100 pounds, in barrels, at works.

SULPHUR.—The sulphur market continues steady. Sulphur is quoted at $18 per long ton on orders of 1,000 tons, or over, on yearly contracts; and at $20 per ton on any smaller quantity over that period. On spot and near by car loads, the quotation is $21 per ton.

TALC.—Conditions in the talc market are fairly satisfactory. Prices are holding to formerly quoted levels. Domestic talc is selling at from $16 to $18 per ton, in bulk, at eastern mines; while imported talc is offered at from $23 to $30 per ton, on dock.

Market Quotations

Paper

(F. o. b. Mill)

Ledgers	6.50	@	—
Bonds	6.00	@	—
Index	6.00	@	—
Writings—			
Extra Superfine	6.50	@	—
Superfine	6.25	@	—
Tub sized	5.75	@	—
Engine sized	5.50	@	—
Book, Cased—			
S. & S. C.	5.35	@	5.75
S. & S. C. Litho.	5.60	@	6.00
M. F.	5.10	@	5.50
Coated and Enamel	5.90	@	6.55
Coated Litho	5.90	@	6.55
Tissues—Per Ream—			
White No. 1	.82½	@	.85
White No. 2	.67½	@	—
Anti-Tarnish M. G. only	1.00	@	—
Colored	.85	@	—
Kraft	.70	@	—
Manila	.67½	@	.70
Manila—			
No. 1 Jute	9.00	@	9.25
No. 2 Jute	7.75	@	8.50
No. 1 Wood	4.00	@	5.25
No. 2 Wood	3.50	@	4.00
Butchers	4.00	@	4.50
Fibre Papers—			
No. 1 Fibre	4.25	@	5.50
No. 2 Fibre	4.00	@	4.75
Common Bogus	.70	@	1.00
Screenings	2.50	@	3.50
Glassine—			
Bleached	.11	@	—
Unbleached	.09	@	—

(The following Quotations are Delivered New York)

News, per ton—			
Roll, contract	40.00	@	—
Rolls, spot	40.00	@	—
Sheets	45.00	@	—
Kraft—			
No. 1 Domestic	4.75	@	5.00
No. 2 Domestic	3.87½	@	—
Southern	3.87½	@	—
Boards—per ton—			
News	45.00	@	50.00
Chip	42.50	@	47.50
Sgl. Mla. Ll. Chip	52.50	@	55.00
Jute Lined Chip	52.50	@	55.00
White Patent Coated	65.00	@	70.00
Binders Boards	68.00	@	72.00

Mechanical Pulp

(On Dock, Atlantic Ports)

No. 1 Imported—			
Moist	27.00	@	29.00
Dry	27.00	@	30.00
(F.o.b. Mill)			
No. 1 Domestic and Canadian	24.00	@	29.00

Chemical Pulp

(On Dock, Atlantic, Gulf and West Coast Ports)

Bleached Sulphite (Domestic and Foreign)—			
Division 1	2.85	@	—*
Division 2	2.80	@	—*
Division 3	2.75	@	—*
Prime Qualities—			
Class 1. All Prime Easy Bleaching	2.25	@	—*
Other Than Easy Bleaching—			
Class 2. Higher Than Standard	2.20	@	—*
Class 3. Standard	2.15	@	—*
Class 4. Lower than Standard	2.10	@	—
(On Dock, Atlantic Ports)			
Kraft No. 1	1.85	@	1.90
Kraft No. 2	1.60	@	1.70
(F.o.b. Pulp Mill)			
Kraft Domestic	1.60	@	2.75
(Delivered)			
Soda Bleached	2.50	@	—

*Add 60 Cents per short ton, dock charges, for Albany; $2.00 for Lake Ports East and $3.00 for Lake Ports West of Mackinac Straits.

Domestic Rags

New Rags

(Prices to Mill f. o. b. N. Y.)

Shirt Cuttings—			
New White No. 1	6.50	@	7.00
Silesias No. 1	4.25	@	4.50
New Unbleached	6.75	@	7.25
New Soft Blacks	3.00	@	3.25
Blue Overall	4.00	@	4.25
Fancy	2.50	@	2.75
Washables	1.75	@	2.00
Mixed Khaki Cuttings	3.00	@	3.25
O. D. Khaki Cuttings	3.75	@	4.00
Men's Corduroy	1.50	@	.75
New Mixed Blacks	2.50	@	2.75

Old Rags

White, No. 1—			
Repacked	3.00	@	3.50
Miscellaneous	2.75	@	3.25
White, No. 2—			
Repacked	1.75	@	2.25
Miscellaneous	1.50	@	1.75
Thirds and Blues—			
Repacked	1.50	@	1.75
Miscellaneous	1.25	@	1.50
Black Stockings	2.50	@	3.00
Roofing Rags—			
No. 1	1.10	@	1.25
No. 2	.80	@	.85
No. 3	.70	@	.75
No. 4	.65	@	.70
No. 5A	.60	@	.65

Foreign Rags

New Rags

New Dark Cuttings	1.60	@	1.70
New Mixed Cuttings	1.75	@	1.85
New Light Silesias	3.75	@	4.00
Light Flannelettes	3.75	@	4.00
Unbleached Cuttings	6.50	@	6.75
New White Cuttings	6.50	@	6.75
New Light Oxfords	3.25	@	3.50
New Light Prints	2.75	@	3.00

Old Rags

No. 1 White Linens	7.50	@	8.00
No. 2 White Linens	6.50	@	7.00
No. 3 White Linens	4.50	@	5.00
No. 4 White Linens	2.25	@	2.50
No. 1 White Cotton	4.25	@	4.75
No. 2 White Cotton	3.25	@	3.75
No. 3 White Cotton	2.50	@	2.75
No. 4 White Cotton	1.90	@	2.15
Extra Light Prints	2.00	@	2.25
Ord. Light Prints	1.75	@	1.85
Med. Light Prints	1.55	@	1.65
Dutch Blue Cottons	1.75	@	1.85
French Blue Linens	2.30	@	2.40
German Blue Linens	2.15	@	2.25
German Blue Cottons	1.70	@	1.80
Checks and Blues	1.30	@	1.40
Linsey Garments	1.50	@	1.75
Dark Cottons	1.15	@	1.30
Old Shopperies	1.00	@	1.10
New Shopperies	.90	@	1.00
French Blues	1.70	@	1.80

Old Rope and Bagging

(Prices to Mill f. o. b. N. Y.)

Gunny No. 1—			
Foreign	1.50	@	1.60
Domestic	1.40	@	1.50
Wool Tares, light	1.20	@	1.30
Wool Tares, heavy	1.25	@	1.35
Bright Bagging	1.20	@	1.30
Manila Rope—			
Foreign	2.40	@	2.50
Domestic	2.50	@	2.75
Small Mixed Rope	1.10	@	1.35
New Burlap Cut	2.00	@	2.25
Hessian Jute Threads—			
Foreign	2.60	@	2.75
Domestic	2.80	@	3.00

Old Waste Papers

(F. o. b. New York)

Shavings—			
White Envelope Cuttings	2.70	@	2.80
Ordinary Hard White No. 1	2.35	@	2.45
Hard White No. 2	2.10	@	2.20
Soft White No. 1	1.90	@	2.00
Flat Stock—			
Stitchless	.85	@	.95
Over issue Mag.	.85	@	.95
Solid Flat Book	.70	@	.85
Crumpled No. 1	.65	@	.75
Solid Book Ledger	1.50	@	1.65
Ledger Stock	1.05	@	1.15
New B. B. Chips	.30	@	.35
Manilas—			
New Env. Cut	1.70	@	1.80
New Cuttings	1.35	@	1.45
Print	Nominal		
Bogus Wrapper	.40	@	.50
Container	Nominal		
Old Kraft Machine—			
Compressed bales	1.10	@	1.20
News—			
No. 1 White News	1.10	@	1.20
Strictly Overissue	.70	@	1.25
Strictly Folded	.40	@	.50
No. 1 Mixed Paper	.25	@	.30

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Bottom Wet Felts

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Bratislava, Czecho-Slovakei
SVANÖ AKTIEBOLAG
Svanö, Sweden

Twines
(F. o. b. Mill)

Cotton—			
B. C. 18 basis	.30	@	.32
No. 1	.20	@	.21
No. 2	.19	@	.20
No. 3	.17	@	.18
A. Italian, 18 basis	.36	@	.37
Flaxboard Jute—			
Dark, 18 basis	.18	@	.20
Light, 18 basis	.20	@	.22
Jute Wrapping, 3-6 Ply—			
No. 1	.15½	@	.16½
No. 2	.15	@	.16
Tube Rope—			
4-ply and larger	.09¼	@	.09¾
Jute Tube Rope—			
4-ply	.11¼	@	.11¾
3-ply	.14¼	@	.14¾
2-ply	.14¼	@	.14¾
Paper Makers Twine	.08¾	@	.13¾
Box Twine, 2-3 ply	.14¼	@	.14¾
White Hemp	.13¼	@	.16¾
Java Sisal—			
No. 1 Basis	.11½	@	—
No. 2 Basis	.10½	@	—
New Zealand Sisal	.11½	@	—
Sisal Lath Yarn—			
No. 1	.13½	@	.13½
No. 2	.11½	@	.13¾
Manila Twine	.24½	@	.29½

CHICAGO

Paper
(F. o. b. Mill)

Rag Bond	.12	@	.50
Water Marked Sulphite Bond	.06½	@	.15
Sulphite Bond	.05½	@	.15
Superfine Writing	.12	@	.—
No. 1 M. F. Book	.06½	@	.07½
No. 2 M. F. Book	.05½	@	.06½
No. 1 S. & S. C. Book	.06¼	@	.07¼
No. 2 S. & S. C. Book	.05¼	@	.06¼
Coated Book	.07	@	.12
Coated Label	.07	@	.08½
No. 1 Manila	.04½	@	.05½
No. 1 Fibre	.04¼	@	.05¼
No. 2 Manila	.04¼	@	.04¾
Butcher's Manila	.03¼	@	.03¾
No. 1 Kraft	4.75	@	5.00
Southern Kraft	3.88	@	4.25
No. 2 Kraft	3.88	@	4.25
Wood Tag Boards	.04½	@	.05
Sulphite Screenings	.01	@	.02
Manila Tissue	.05¼	@	.07
White Tissue	.07	@	.09
(Delivered Central Territory)			
News, per ton—			
Rolls, contract	41.00	@	—
Sheets, open	46.00	@	51.00
Boards, per ton—			
Plain Chip	46.50	@	—
Solid News	50.00	@	—
Manila Lined Chip	55.00	@	—
Patent coated	65.00	@	—
Container Lined—			
85 Test, per 1000 sq. ft.			1.70
100 Test, per 1000 sq. ft.			1.85

Old Papers
(F. o. b. Chicago)

Shavings—			
No. 1 White Envelope cuttings	1.70	@	2.00
No. 1 Hard White	1.40	@	1.65
No. 1 Soft White	1.25	@	1.50
Ledger & Writings	.70	@	.80
Solid Books	.60	@	.70
Blanks	1.00	@	1.05
Kraffts	.80	@	.90
New Kraft Cuts	1.20	@	1.30
Manila Env. Cuts	1.25	@	1.30
Ex. No. 1 Manila	.90	@	1.00
Print Manila	.50	@	.55
Overissue News	.60	@	.70
Old Newspapers—			
No. 1	.50	@	.55
Mixed Papers—			
No. 1	.30	@	.35
Roofing Stocks—			
No. 1	30.00	@	—
No. 2	28.00	@	—

PHILADELPHIA

Paper
(F. o. b. Mill)

Bonds	.04	@	.40
Ledgers	.06	@	.40
Writings—			
Superfine	.10	@	.18
Extra Fine	.15	@	.24
Fine	.13	@	.24
Fine, No. 2	.10	@	.23
Fine No. 3	.05½	@	.18
Book, M. F.	.04¼	@	.07
Book, S. S. & C.	.05	@	.07½
Book, Coated	.06	@	.14
Coated Lithograph	.06	@	.15
Label	.07	@	.11
No. 1 Jute Manila	.06	@	.10
Manila Sul., No. 1	.03	@	.06
Manila No. 2	.03	@	.05
No. 1 Kraft	.05¼	@	.06½
No. 2 Kraft	.03¼	@	.05
Southern Kraft	2.75	@	4.00
Common Bogus	.03	@	.04½
(Delivered Philadelphia)			
News Print Rolls	46.00	@	55.00
Straw Board	40.00	@	45.00
News Board	50.00	@	—
Chip Board	45.00	@	—
Wood Pulp Board	70.00	@	85.00
Binder Boards—			
No. 1, per ton	75.00	@	80.00
No. 2, per ton	70.00	@	75.00
Carload lots	65.00	@	70.00
Tarred Felts—			
Regular	52.25	@	54.25
Slaters (per roll)	85	@	90
Best Tarred, 1-ply (per roll)	1.95	@	2.10
Best Tarred, 2-ply (per roll)	1.50	@	1.60
Best Tarred, 3-ply	2.00	@	2.15

Domestic Rags (New)
Price to Mill, f. o. b. Phila.

Shirt Cuttings—			
New White, No. 1	.03½	@	.04
New White, No. 2	.02½	@	.04
Light Silesias	.02½	@	.03
Silesias, No. 1	.03	@	.03½
Black Silesias, soft	.02½	@	.03
New Unbleached	.05	@	.05½
Washable, No. 1	.01½	@	.02
Blue Overall	.03½	@	.04
Cottons—According to grades—			
Washable, No. 2	.02½	@	.03
New Blue	.01½	@	.03
Fancy	.01½	@	.03
New Black Soft	.02	@	.04
New Light Seconds	.01½	@	.02
New Dark Seconds	1.50	@	1.75
Khaki Cuttings—			
No. 1 O.D.	.03	@	.04
No. 2 Mixed	.03	@	.04
Corduroy	.02	@	.03
New Canvas	.03½	@	.04½
New Black Mixed	.02½	@	.03½

Domestic Rags (Old)

White No. 1—			
Repacked	2.50	@	3.50
Miscellaneous	1.75	@	2.25
M. G.	3.00	@	3.75
Thirds and Blues—			
Miscellaneous	1.00	@	1.50
Repacked	1.50	@	2.00
Black Stockings (Export)	2.00	@	3.50
Roofing Stock—			
Foreign No. 1	.50	@	.75
Repacked	.70	@	.85

Bagging
(F. o. b. Phila.)

Gunny, No. 1—			
Foreign	1.25	@	1.50
Domestic	1.50	@	1.75
Manila Rope	2.00	@	2.25
Sisal Rope	1.25	@	1.50
Mixed Rope	1.00	@	1.10
Scrap Burlaps—			
No. 1	1.25	@	1.50
No. 2	.80	@	.90
Wool Tares, heavy	2.75	@	—
Mixed Strings	1.15	@	1.25
No. 1 New Light Burlap	2.25	@	2.50
New Burlap Cuttings	2.00	@	2.25

Old Papers
(F. o. b. Phila.)

Shavings—			
No. 1 Hard White	2.25	@	2.30
No. 2 Hard White	2.00	@	2.10
No. 1 Soft White	2.05	@	2.10
No. 2 Soft White	1.50	@	1.60
No. 1 Mixed	.95	@	1.00
No. 2 Mixed	.75	@	.80
Solid Ledger Stock	1.50	@	1.60
Writing Paper	1.25	@	1.50
No. 1 Books, heavy	.90	@	1.00
No. 2 Books, light	.70	@	.80
No. 1 New Manila	1.20	@	1.50
No. 1 Old Manila	.85	@	.90
Print Manila	.75	@	.80
Container Manila	.65	@	.70
Old Kraft	1.00	@	1.10
Common Paper	.35	@	.40
No. 1 Mixed Paper	.40	@	.45
Straw Board Chip	.40	@	.45
Binders Board Chip	.40	@	.45
Corrugated Board	60	@	65
Overissue News	60	@	65
Old Newspapers	.40	@	.50

BOSTON

Paper
(F. o. b. Mill)

Ledgers—			
Sulphite	.06	@	.12½
Rag Content	.12	@	.30
All Rag	.36	@	.52½
Bonds—			
Sulphite	.05½	@	.11
Rag Content	.12	@	.40
All Rag	.36	@	.65
Writings	.06½	@	.20
Superfines	.11	@	.31
Book, Super	.06	@	.09
Book, M. F.	.05½	@	.08½
Book, Coated	.08¼	@	.18
Coated Litho	.09	@	.12
Label	.09½	@	.15
Jute Manila No. 1	.11	@	.13
Manila, Sul. No. 1	.04¼	@	.06¼
Manila, Sul. No. 2	.03¼	@	.04½
No. 1 Kraft	.04¼	@	.05
No. 2 Kraft	.03½	@	.04¼
(F. o. b. Boston)			
Southern Kraft	.03½	@	.04¼
(F. o. b. destination in carload lots, f. o. b. mill in less than carload lots.)			
Common Bogus	.02	@	.02¼
(Delivered New England points)			
News Print, rolls	44.50	@	—
Straw Board, rolls 009	—	@	35.00
Straw Board in Sheets, basis 35x to 70x	—	@	40.00
Filled News Board	45.00	@	50.00
Chip Board	42.50	@	47.00
Chip Board (Creasing)	45.00	@	—
Single Manila Lined Chip	52.50	@	62.50
Single White, Patent Coated News Board—Bender	62.50	@	72.50
Wood Pulp Board	70.00	@	75.00
Binder Boards	62.00	@	75.00

Old Papers
(F. o. b. Boston)

Shavings—			
No. 1 Hard White	2.20	@	2.35
No. 1 Soft White	1.75	@	2.00
No. 2 Mixed	.75	@	.80
Solid Ledger Books	1.75	@	—
Envelope Ledger Stock	1.15	@	1.30
Mixed Ledgers	.95	@	1.05
No. 1 Books, heavy	.85	@	.95
No. 1 Books, light	.65	@	.75
Crumpled Stitchless Book Stock	.50	@	.60
Manila Env. Cuttings	1.25	@	1.30
No. 1 Old Manila	.75	@	.80
White Blank News	1.05	@	1.10
No. 1 Kraft	1.10	@	1.15
Manila	.70	@	.75
No. 1 Mixed Papers	.20	@	.25
Print Manila	.40	@	.45
Overissue News	.50	@	.55
Old Newspapers	.35	@	.40
Box Board Chips	.32½	@	.35
Corrugated Boxes	.35	@	.40
Screening Wrappers	.60	@	.70

Bagging
(F. o. b. Boston)

Manila Rope—			
Foreign	—	@	2.25
Domestic	—	@	2.50
Transmission Rope	1.60	@	—
Mixed Strings	—	@	.60
Jute Rope	1.35	@	—
Jute Carpet Threads	.65	@	.70
Gunny No. 1—			
Foreign	1.55	@	—
Domestic	1.20	@	1.25
Bleached Burlap	3.00	@	4.25
Scrap Burlap	1.15	@	—
Scrap Sisal	1.10	@	1.20
Scrap Sisal for shredding	1.25	@	1.35
Wool Tares, heavy	—	@	1.25
New Burlap Cuttings	1.35	@	1.60
Australian Wool Pouches	2.25	@	2.50
Heavy Baling Bagging	1.40	@	1.50
Paper Mill Bagging	.90	@	1.10
Bagging No. 2	.50	@	.55

Domestic Rags (New)
(F. o. b. Boston)

Shirt Cuttings—			
New Light Prints	.02	@	.02½
New White No. 1	.06½	@	—
New White No. 2	.04½	@	.05
Silesias No. 1	.04	@	—
New Black Silesias	.02½	@	.03
New Unbleached	.07	@	.07¼
Blue Cheviot	—	@	4.65
Fancy	—	@	04½
Washable	.02¼	@	—
Cottons—According to grades—			
Blue Overalls	—	@	03¼
New Black, soft	04	@	04
Khaki Cuttings	.03	@	.03¼
O. D. Khaki	.03	@	.03¼
Corduroy	.01¾	@	.02
New Canvas	—	@	05
B.V.D. Cuttings	—	@	.06¼

Domestic Rags (Old)
(F. o. b. Boston)

Canvas	04½	@	—
White No. 1—			
Repacked	1.90	@	1.95
Miscellaneous	2.00	@	2.25
White No. 2—			
Repacked	2.00	@	2.25
Miscellaneous	2.00	@	2.75
Twos and Blues	1.25	@	1.50
Thirds and Blues			
Repacked	1.10	@	1.25
Miscellaneous	.85	@	.90
Black Stockings	2.25	@	2.50
Roofing Stock			
No. 1	.95	@	1.00
No. 2	.75	@	.80
No. 3	.60	@	.65

Foreign Rags
(F. o. b. Boston)

Dark Cottons	1.00	@	1.10
New White Shirt Cuttings	5.50	@	6.00
Dutch Blues	2.00	@	2.50
New Checks & Blues	2.50	@	3.00
Old Fustians	1.55	@	1.60
Old Linsey Garments	1.25	@	1.35

TORONTO

Paper
(F. o. b. Mill)

Bond—			
No. 1 Sulphite	.10¼	@	—
No. 2 Sulphite	.08½	@	—
No. 1 Colored	.10¼	@	—
No. 2 Colored	.09	@	.10
Ledgers (sulphite)			
Ledgers, No. 1	.14½	@	—
Ledgers, No. 2	.25½	@	—
Writing	09	@	.09½
Book—			
No. 1 M. F. (Carloads)	6.20	@	—
No. 3 M. F. (Carloads)	5.70	@	—
No. 4 M. F. (carloads)	4.75	@	—
No. 1 S. C. (carloads)	6.65	@	—
No. 3 S. C. (carloads)	6.20	@	—
No. 4 S. C. (carloads)	5.20	@	—
No. 1 Coated and Litho	12.00	@	—
No. 2 Coated and Litho	10.50	@	—
No. 3 Coated and Litho	9.50	@	—
Coated Unitex	14.00	@	—
Wrapping—			
Rag Brown	4.25	@	—
White Wrap	2.22½	@	—
"B" Manila	4.75	@	—
No. 1 Manila	5.25	@	—
Fiber	5.25	@	—
Kraft, M. F.	5.75	@	—
Kraft No. 2	5.25	@	—

(F.O.B. Cars Toronto)

News, per ton—			
Rolls (contract)	45.50	@	—
Sheets	50.50	@	—

Pulp
(F. o. b. Mill)

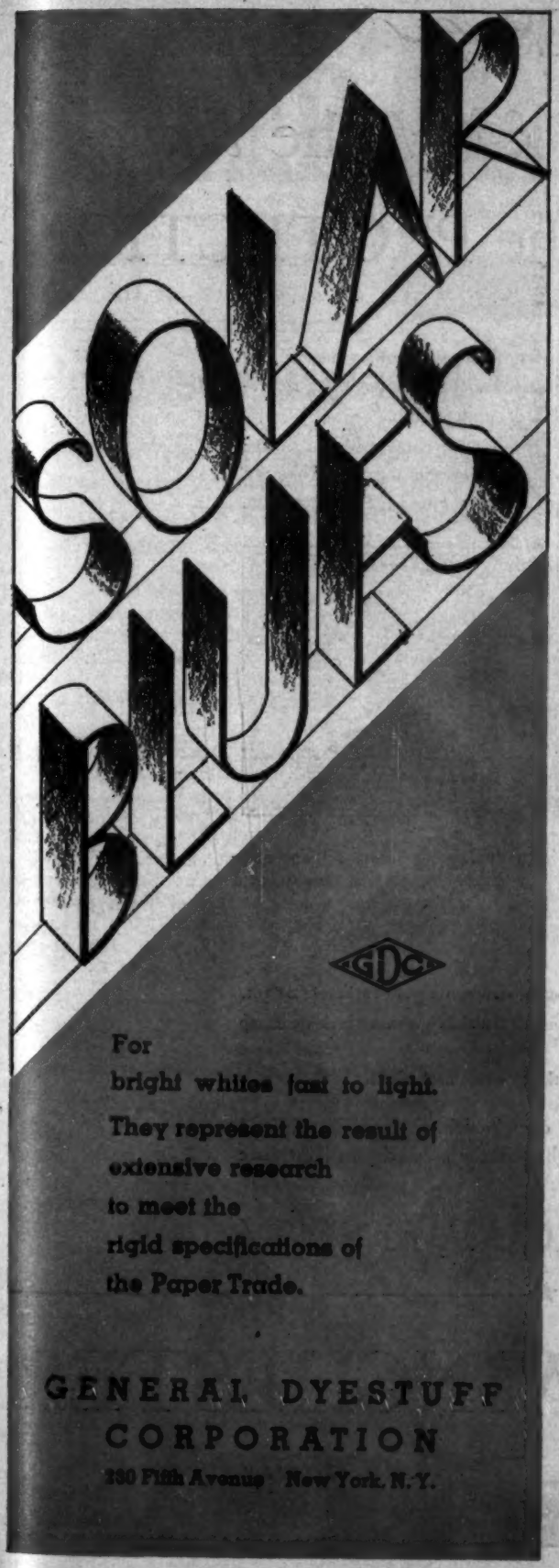
Ground Wood	18.00	@	20.00
Sulphite easy bleaching	40.00	@	—
Sulphite, news grade	38.00	@	—
Sulphite, bleached	50.00	@	55.00
Sulphate	30.00	@	—

Old Waste Paper
(In carload lots, f. o. b. Toronto)

Shavings—			
White Env. Cut	2.00	@	2.30
Soft White	1.60	@	1.90
White Blk. News	1.25	@	1.40
Book and Ledger—			
Flat Magazine and Book Stock (old)	.90	@	1.00
Light and Crumpled Book Stock	.80	@	.90
Ledgers and Writings	1.00	@	1.05
Manilas—			
New Manila Cut	1.25	@	1.30
Printed Manilas	.70	@	.80
Kraft	1.25	@	1.30
News and Scrap—			
Strictly Overissue	.80	@	—
Strictly Folded	.60	@	—
No. 1 Mixed Paper	.50	@	—

Domestic Rags
(Price to mills, f. o. b. Toronto)

No. 1 White Shirt Cuttings	.06	@	.06½
Fancy Shirt Cuttings	.02¼	@	.02½



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Want and For Sale Advertisements, 52-53

Safety Devices, YES

but with S & W the *blade* furnishes the PROTECTION

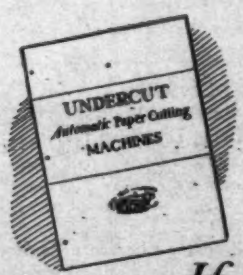
S & W trimmers have man-made safety devices like other cutters. But on top of these, the Undercut *principle* is the one positive, never-failing check against the horror of a dropping knife.

In Undercuts, the knife works from below. The cutting edge is always up. When dropping, the knife does not follow its cutting stroke. In these trimmers *alone*, gravity acts as a constant guard against accidents.

Even during installation, the blade is always up. Dropped, the edge is always on top—no danger of ugly cuts.

No safety device is needed here. The cutting edge always falls away from the danger point.

Other features:



DUAL CONTROL keeps both hands below cutting table at time of the cut.

POSITIVE DRIVE (not a friction drive) and an automatic pressure clamp preventing slippage.

FEWER MOTIONS, faster work, closer control of cut.

Complete description is contained in Bulletin T-12. Send for a copy. Consider right now the possibility of immediate replacement.

If it's UNDERCUT, *it's* S&W

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